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INDIAN TARE POISONING.

We reprint from a Bristol paper a report of the action brought by the Bristol Tramway Company against a corn merchant. We hope next week to obtain a report of the judgment in the case, which was not delivered at the Bristol Assizes on the conclusion of the evidence but in London some days afterwards. It need only now be said that the plaintiffs obtained a verdict in their favour.

The evidence seems to us to be capable of no other interpretation than that the tares, or peas as they are wrongly called, caused the death of the horses. The only question then to be decided was whether the Tramway bought on their own risk from a sample supplied, or whether they bought a material hitherto unknown to them on the vendors, recommendation that it was a good food for horses. The judge has decided that the food was warranted by the sellers. The evidence is very interesting, although it adds little to our knowledge of the symptoms caused by the *lathyrus sativus*. The evidence for the defence is even more interesting than that for the plaintiffs. Quite a number of witnesses were produced who testified to a large trade in this poisonous stuff. It is sold in tons, and the incidental remark was made that 300,000 acres in India were devoted to its production. In a recent "note" on this subject we expressed our ignorance as to how anyone in India could sell these tares knowing they were dangerous and how any English dealers became possessed of them. The explanation is offered in this trial, and we now know that they are imported here because there is a constant market for them. *They are used to adulterate pea flour.* "Commercial competition" has discovered a material at 20s. per ton which can be mixed with a good article worth 40s. This enables the honest merchant to sell pea flour under the cost of whole peas, and sapient chemists to help the sale of the mixture by analyses showing its high nitrogenous composition but not disclosing its dangerous properties.

Indian "Muttars" may be a lucrative article of trade, but as a food for horses they are worse than useless—they are a poison. It is said they are not injurious to cattle, but who knows? Is it quite certain that all the cases of obscure disease do not include some "muttar" poisoning? Here is work for the Royal Agricultural Society, who are greatly interested in the adulteration of feeding stuffs. Only a little time and money are required to determine the effect of Indian "muttars" upon cattle and pigs. If it be shown that they are dangerous to these animals our Customs-House Officers should be empowered to prevent the importation.

Oats are often not free from an accidental admixture of tares, but the proportion of vetch seeds has notably increased in late years, especially in light samples. The explanation may probably be found in the price and weight of Indian "muttars."

THE ROYAL VETERINARY COLLEGE.

Competition is not confined to the grain trade, it exists in professions, and apparently is not unknown in scientific institutions. The report of the meeting of Governors of the Royal Veterinary College, which has obtained a wide publicity owing to the presence and speech of H.R.H. the Duke of Cambridge, is not satisfactory.

In recent years students have entered in increasing numbers, the tuition has been thoroughly remodelled, and everyone allows immensely improved. The last year's balance sheet unfortunately shows a loss of £500 on the working of the College. This is a serious matter, and we agree with the Governors that steps must be taken to produce an equilibrium. We entirely disagree with the proposed steps. To obtain a greater number of annual subscribers is right; but to attempt this by merely advertising that the College will do work cheaper than the private practitioner is wrong.

What other scientific institution offers rich subscribers an inducement to patronise it simply that they may save money? The gratuitous practice offered to poor people is altogether necessary for the students and, although often accompanied by wrong to private practitioners, may be tolerated. Owners of large studs and comparatively rich men are mean enough to send horses to the College "cheap practice." The harm done does not cease with the loss of a patient, it sometimes entails the loss of a client when the "professor" makes a diagnosis different from that of the practitioner who has been attending. It is very awkward when the practitioner has recommended un-nerving and the professor advises blistering a splint—or *vice versa*. This however is perhaps unavoidable, for it is quite impossible to guard against deliberate deception by the men who make use of open cliniques, whether at a human or veterinary hospital.

The objection to the competition of the Royal Veterinary College is well founded when that for which practitioners charge a guinea is offered to rich men for a few shillings. The effect is to depreciate the value of professional opinion throughout the country, and to teach horse-owners that the usual fee for examining horses is exhorbitant. Surely an appeal for support might, with more dignity and fairness be issued by the Governors based upon the position and utility of the institution, and not upon the pecuniary advantages of dealing at the cheapest shop.

CASES AND ARTICLES

FRACTURE OF THE CERVICAL VERTEBRÆ COMPLICATED WITH AZOTURIA.

By D. C. Campbell.

The following case occurred in the practice of Messrs. Greaves, Faulkner & Jones, Manchester, and being one rather out of the usual run, I thought it might prove interesting to some of your readers.

On the morning of Thursday, June 7th, about half-past six, I was called in haste to one of the large Railway Companies' stables to attend a horse, which, according to the messenger's account, was down and could not get up. I immediately set out, and on my arrival, found the patient to be a large bay cart horse. He was lying in the passage, between two rows of stalls, supported by bags of straw and covered with rugs.

History. The horse had been standing idle for some days, under treatment for canker. On the Wednesday night he was left apparently all right, having taken what food and water was allowed him. On Thursday morning about 5.30, the attendant found him cast in the stall, his body lying right across the stall and his head and neck firmly fixed in the left hand corner under the manger. Plenty of assistance being at hand he was pulled back and raised to his feet, when he seemed to stand all right. The attendant anxious to see whether or not he was hurt, backed him carefully out of the the stall, and tried to walk him along the passage. He managed to walk about 3 yards, then suddenly fell, and all efforts to raise him again were fruitless. Seeing this the attendant made him as comfortable as possible and sent for us.

Symptoms. The horse was lying on his off side, occasionally struggling very violently, using both fore and hind legs very well. He would try very hard to get to his feet, but seemed quite incapable of doing so. At times he would elevate his head and try to look round, but seemed to use his neck very stiffly. On examination I found that the pulse at the jaw was altogether imperceptible, but on taking the impulse of the heart at the chest, I found it to be 104 per minute. The visible mucous membranes were very much injected. Ears and legs cold. Temperature 101 F.; respiration very hurried. Countenance very anxious. I was told that at first he had perspired profusely, but by the time I saw him he was cool and dry.

Diagnosis. Surmising from his condition that there was some injury to the spinal column, and from the stiff movements of his neck, most probably located in the cervical vertebræ, I proceeded to make a careful examination. Commencing at the head, I found that it was very much bruised and cut from dashing it about on the stones of the stall. I manipulated carefully about the occipito-atlantal and atlanto-axial articulations but discovered nothing, and on flexing the head on the neck no pain at all was evinced. Proceeding downwards I found very slight swelling about the middle of the neck, and on pressure over it, a slight degree of pain was produced. No sign of pain was shown on pressure over any other part of the spine. I next examined all the legs, but found nothing amiss with them and as he could use them very well, I put the idea of injury to them to one side. Manipulating the muscles of the shoulder and elbow I found that they were rather tense, and passing back to the muscles of the quarters and loins I found that they were exceedingly so. This aroused a new suspicion in my mind, viz., that I had "Azoturia" as a complication.

Prognosis. I informed the attendant that in my opinion the horse was suffering from severe injury to the spine, in the region of the neck, complicated with an attack of "Azoturia." My reasons for arriving at these conclusions were as follows:—

1.—The horse had been standing idle for some days, getting a fair allowance of nitrogenous food.

2.—During the night, I opined, that he had suffered from an attack of colic, and that in the restlessness consequent on the pain, viz., lying and rolling, he had become fixed in the stall.

3.—Finding himself fixed he would struggle more violently, become more securely fixed, and at that time, no doubt, injure his neck.

4.—The exertion caused by the struggling, brought on an attack of "Azoturia," in the same manner as exercise does after a horse has been standing in the stable for some days. Unfortunately I had not provided myself with a catheter so could not get positive evidence of the existence of azoturia by the withdrawal of urine.

I told the attendant that I considered the case hopeless but would return in a short time and see if any further symptoms had developed, and I would also bring a catheter with me and withdraw the urine.

In the meantime I saw that the horse was made comfortable, and I gave him a stimulating drink consisting of Spts. Ammon. Aromat and Spts. Æther Nit. He experienced no difficulty in swallowing and took the drink very well. To keep him quiet and prevent him further injuring himself, I gave him a hypo-dermic injection of Morphia. I instructed the attendant to give him diuretics in the shape of Pot. Nit. ʒi. in half a pint of water, and to keep hot flannel cloths on his neck.

I was unable to see the horse again, but he was seen by the assistant, Mr. Crook, about 11.30 in the forenoon, and the following were the symptoms then shown.

Pulse imperceptible; breathing oral. The neck particularly about the centre was very much swollen, muscles of shoulders, quarters and loins still very tense. There had been profuse bleeding from both ears. On passing the catheter a fair amount of dark coffee-coloured urine was withdrawn, and a subsequent examination of this convinced us of the existence of Azoturia. Soon after the withdrawal of urine the horse made some slight struggles and died.

Post-mortem. The post-mortem made by Mr. Crook on Friday revealed the following conditions. The muscles of the loins, quarters, back and neck were bruised and blackened, but in the case of the first

three only superficially. Beginning at the neck and cutting down on the cervical vertebræ. Mr. Crook found that a partial dislocation of the neck had taken place between the third and fourth vertebræ, and the same between the fourth and fifth vertebræ.

These vertebræ were carefully cleaned and are now in our possession. The condition they exhibit is as follows: In the fourth vertebræ the anterior extremity of the body is broken off about half inch behind the articulation. Another fracture extends obliquely from right to left across the roof of the neural canal, completely detaching the anterior oblique process on the right side, the anterior portion of the neural spine and half of the anterior oblique process on the left side. The anterior extremities of the transverse processes of both sides are also fractured. In the fifth vertebræ, the anterior oblique process of the left side is fractured right through its centre.

On opening the abdomen, and examining the bowels, patchy inflammation was found, particularly in the double colon, the wall of the bowel also being thickened. Here no doubt was the seat of all the trouble. Of the other organs, the kidneys, were found to be very much congested, but sub-lumbar muscles apparently healthy. Liver extremely congested, bladder empty and apparently healthy. Lungs engorged with blood, due to gradual suffocation by pressure on the cord. Trachea and larger bronchi contained froth, and mucous membrane was gangrenous.

A sample of the urine was submitted to Professor McFadyean for examination, and he reported that he considered it quite characteristic of Azoturia.

VETERINARY SOCIETIES.

NOTES ON PARTURITION.

By H. Thompson, M.R.C.V.S., Aspatria.

(Read at the meeting of the North of England V.M.A. on May 25th. See p. 26.)

Before considering the subject of parturition I will briefly refer to a complaint which is very common in Cumberland known as impervious os uteri. At one time I thought that the lesion was, as the name indicates, obliteration of the os uteri; but recent investigations have led me to think differently. In the virgin heifer, in perfect health, the vagina is very much corrugated immediately anterior to the meatus urinarius. In this complaint the vaginal passage is entirely obliterated by these corrugations. Strange to say this lesion is always seen in white heifers. I have operated on a large number of cases during the last 35 years, but I have only met one exception—a case in a light roan heifer. The animal rarely shows any symptoms of the complaint until she has had communication with the bull, then the symptoms are developed in a period varying from 12 hours to six weeks, the principal portion of the cases occurring in from 12 to 20 days, when the animal is noticed to erect the tail and strain and press as if about to calve. Any fæces which may be in the rectum are forcibly ejected and occasionally, in severe cases, the rectum is everted, and bloody mucus is discharged from the vagina.

On visiting the animal and finding the above symptoms with the history of the case and the colour of the cow, the arm should be washed in soapy water and introduced into the rectum. Immediately the hand is passed through the anus a tense bladdery body is felt beneath the floor of the rectum, and by passing the hand farther forward this bladdery extension is found to extend as far forward as the brim of the pelvis and into the abdominal cavity. Being satisfied what is amiss, the hand is withdrawn, the fore finger of the left hand is passed into the vaginal passage when immediately anterior to the urinary meatus the obstruction is found and a roughening is felt left from the penetration of the male in the act of serving.

A trocar and canula (the latter being 10 inches long and 5-8 of an inch diameter) is passed up along the fore finger of the left hand (the point of the trocar being withdrawn in the canula) until against the roughening, then the trocar and canula are forced through the roughening into the vaginal passage. The trocar is then withdrawn and the fluid contents escape, this latter being very much assisted by passing the hand into the rectum. The uterus is then washed out with a gallon and a half of tepid water containing one ounce of tinct. ferri.

I have met with cases—and operated upon them—where the animal had had no connection with the male, one case being that of a white heifer, nine or ten months old. The fluid in these cases is of a dirty milky whey colour, with a very fætid smell, while in those having had communication with the bull the fluid is of a dirty brown colour with a "stink" resembling that of a decayed cleansing fluid.

Referring to parturition, diagram No. 2 is the natural presentation seen both in mare, cow and sheep, the nose between the knees, and the fore feet protruding through the vulva. In some cows at their first calving all the pelvic ligaments are well relaxed, yet round the vulva for an inch and a half or so there is a constricted sort of band with little or no relaxation. In these cases the owner or attendants as a rule seize hold of the two fore feet and pull until the shoulders and head of the fœtus are jammed tight in the passage. The head having receded on account of the tightened vulva the fœtus is generally extracted by main strength, with extensive laceration of the vaginal passage and fatal hœmorrhage. By introducing the hand into the passage and examining the head and surroundings a strong cord should be passed over the head behind the ears of the calf bringing the rope along each side of the calf's face and knotting the ends outside thus forming a loop. By traction on this cord and manipulation with the other hand, the head is delivered pulling, first one leg and then the other until the fœtus is extracted.

Diagram No. 3 represents a case of dropsy of the abdomen of the fœtus. The presentation is natural and there may be plenty of room, but all the force which the farmer or attendants may use, fails to accomplish delivery. By passing the hand over head, neck and shoulder of the fœtus the cause of the obstruction is found in the distended belly of the calf. Some practitioners use a large trocar, and press this through the breast or side of the ribs of the calf, whichever is easiest of access. For my own part I prefer the ordinary parturition finger knife, pressing this in between two ribs when the fœtus and water come away readily.

No. 4 diagram represents the head being presented with the feet back. In some cases the head may be repelled and the feet got up, more particularly in the mare and ewe, but in the majority of cases it is best to dissect the skin back and remove the head by the atlo-axoid articulation, tying the skin firmly round the end of the bone leaving the end of the cord outside, then by pressing the

neck back into the uterus and getting up the feet delivery is accomplished.

Number 5 shows a very common presentation in the mare, cow and sheep. In this we have both fore legs presented while the head is bent back with the nose forward pointing behind the elbow. This case is generally made more difficult by the attendants seizing the forelegs and pulling them without examining the position of the head. The feet should be secured with cords and a hook put into the eye socket or angle of the jaw, or a strong cord put in the mouth securing the under jaw, the fœtus repelled into the uterus and the head manipulated into position. No. 6 is a somewhat similar presentation to the last, but the nose is pointed backwards towards the flank. In No. 7 the forelegs are presented as in 5 and 6, but the head is thrown backward on the back of the fœtus. The feet in both 6 and 7 must be secured with ropes. A cord put into the mouth, or hook in the eyesocket, the body pressed back into the uterus and the head, if possible, brought into position.

These three last cases at times cause a great deal of trouble by the parties tinkering on with them too long before sending for veterinary aid; all the natural waters having been expelled and uterine pains exhausted, while the uterus itself has contracted on the fœtus as tight as a glove on a lady's hand. When this is met with the best mode of procedure is to make 6 or 8 quarts of linseed jelly. Strain it through a cloth and pump it in the uterus over the body of the fœtus with Reed's patent enema syringe. The linseed jelly not only distends the uterus and floats the fæces, but acts almost as natural waters. If the head cannot be got into position after this (which is most common in the cow) then the finger knife or the large embryotomy knife must be carried as far up on the shoulder as possible, dividing the skin down the whole length of the limb to the fetlock. A cord should then be fixed round the pastern joint, and while an assistant pulls this steadily outwards the shank is skinned as far up as possible. The skin should be secured by a small cord, then with the fingers detach the skin from the rest of the limb up over the shoulders as far as can be reached. The knife is then again introduced and the pectoral muscles divided. Strong traction is applied to the rope round the fetlock and the limb generally comes away. The head may then be got into position. If, however, this is not yet possible the other limb must be removed in a like manner. As soon as both legs have been removed the fœtus loses its support, dropping into the bottom of the uterus, when the head can readily be got round by means of hooks and cords. In the mare when both forelegs are presented and the head thrown back on the quarter—a very common occurrence—the bones of the face of the fœtus are developed to correspond with the convexity of the quarter. The feet are usually seen outside of the vulva, but only the tips of the ears can be reached. In this case no time should be wasted in trying to turn the head round, but proceed at once to remove the forelegs and turn the head as already described. In the mare I consider this one of the most formidable cases met with.

No. 8 represents the animal on its back with the back of the head presented and the feet back. This case is most readily righted by casting the animal, putting her on her back and elevating the quarters with trusses of straw. By bringing the head of the fœtus round by hooks or cords the feet may be placed in position by the hands or secured with cords.

No. 9 is a breech presentation with the hind legs coming in proper position for delivery which may be accomplished without any inconvenience to mother or fœtus, but in many cases where the calf is large it dies in the birth.

No. 10 is where the points of the hocks are presented at the brim of the pelvis. Delivery may be accomplished as is shown in plates 11 and 12 by repelling the fœtus into the uterus, and pressing the quarters of the fœtus against the spine of the mother, steadying it there by the repeller, while the other hand manipulates the foot by pressing the toes into the hollow of the heel, bringing the foot round over the brim of the pelvis of the mother and into the passage. Both limbs having been manipulated in this fashion delivery is accomplished.

In No. 13 the tail and breech are presented and pressed tight on to the brim of the pelvis. In the cow delivery may be managed as in the three preceding cases, but in the mare—if the points of the hocks can't be reached—which is most frequently the case—the only mode of procedure with safety to the mother is to cut through from the stifle joint over the hip joint to the point of the ischium, liberating the head of the femur—not an easy job—to which a cord is attached. This is pulled outwards by an assistant, while the operator with the knife cuts through the muscles on the inside of the thigh. The leg is thus extracted thigh foremost. After this the abdomen must be opened and the fœtus eviscerated. Breaking through the obturator foramen a stout cord is passed through, and while the operator presses the other hind limb against the walls of the empty abdominal cavity, this cord is steadily and forcibly pulled and delivery takes place. Sometimes, however, both hind legs have to be removed. The dotted lines on plate 13 shewing a cord attached to the foot is copied from a plate in Steele's "Diseases of the Ox." I would travel some distance to meet a man with length of arm sufficient to cord a pastern so placed, and even after this cord is fixed, if it were possible, I should like to know how delivery is to be accomplished. I also think that some difficulty would be encountered in trying to pass the hook in between the thighs as shewn on the diagram. The representation of the incision and head of the femur is my own.

Nos. 14 and 15 show all four feet presented in the passage with the head turned back on the side or quarter. These cases are of frequent occurrence in the mare, and can be made a very easy operation or a most difficult one, more particularly so if someone has brought the fore feet outside the passage as far as the knees, while the head is out of reach pressed back into the uterus, as in diagram 7, only making this case more difficult by having the hind feet in the passage over the brim of the pelvis. If called early, or where no interference has taken place, the case may readily be adjusted and delivery be accomplished in a very short time, by attaching strong cords to the pasterns of the hind limbs, and while these are pulled out alternately by assistants the operator presses the fore feet back into the uterus. The hind quarters come into the passage and by careful and steady traction delivery is soon over. Where the legs are jammed in the passage, for the safety of the mother, press the hind feet back to the brim of the pelvis, remove the forelegs as described under diagram 7, then bring the hind feet forward by cords attached, prior to their being repelled, the operator then pressing the breast of the fœtus back into the uterus while assistants pull it away hind legs first.

No. 16 represents a case in which the back of the head and neck presented, the forelegs being back and the pastern joints doubled round the thigh of the hind legs, while the hind legs pressed against the brim of the pelvis of the mother. The fœtus was very rigid, as if all the joints were anchylosed. After many attempts to straighten the head—resulting in failure—it was detached and a strong cord was fixed over the neck close down to the breast, it then could not be stirred. The upper shoulder was next removed with great difficulty, a cord was passed round the humerus, and with strong pulling the leg came away. The sternum was detached on each

side and removed, the four anterior ribs were next removed, by passing the knife between each rib up to the vertebra and twisting them off, the contents of the thoracic and abdominal cavities were then torn out; the remaining foreleg and the two hind feet were pressed towards the spine of the fœtus while assistants pulled on the neck cord, and extraction followed. The operation lasted four hours and the mare did well.

No. 17 is a transverse presentation where the fœtus is lying crosswise in the womb, with the points of the hock presented towards the os uteri, and the quarters pressing to the off side of the mother with the hind feet pressed firmly against the near side; the root of the tail within reach, but the feet and pastern joints can't be touched. The best mode of procedure is to cut through the tendo achilles above the point of the hock, bring the point of the hock outwards with the hook, put a loop round the front of the hock with a good strong cord; flex the front of the shank bone against the front of the tibia and pull the hind legs into the passage, when extraction of the fœtus follows.

Nos. 18 and 19 represent twins. In all cases of parturition before any cords are attached or any pulling attempted careful and minute exploration and examination must be made—more particularly so in cases of double or triple birth. Make perfectly certain that the legs belong to the head and neck of the fœtus presented.

No. 20 represents a case of monstrosity in which the hind legs were doubled over the shoulder and the forelegs under the chin, while the walls of the abdomen were reflected over the hind legs and the viscera floating loose in the uterus of the mother. When the bowels are presented first, after careful examination they must be removed, then divide the vertebra at the most convenient point and extract the portion readiest to hand by passing in hooks. When the head and feet are presented the case is more serious. Sometimes one or both forelegs may be removed, and by attaching a cord to the head you may be fortunate enough to break the back bone through. After removing the anterior portion the rest is removed by hooks, while the viscera follow.

No. 21 is a case of torsion of the uterus. Having had several of these cases I have never yet, except the first case, which was killed, found a complete twist, but only a partial one on the under side of the vagina. The animal may show signs of parturition, paddling with her feet, screwing her quarters, whisking the tail; the pelvic ligaments and vulva relaxed but yet no pronounced labor pains. On introducing the hand into the passage, about three-quarters of the way up you find a distinct cordy thickening on the floor of the vagina, running from right to left or *vice versa*, resembling half a screw. After passing the hand over the screw you come into a cavity before reaching the os uteri. On reaching the womb the fœtus may be felt. If lying in the position represented in the diagram the head and feet must be secured with ropes and hooks and brought gently forward and jammed as far into the passage as possible. In some cases the animal drops suddenly on to her side and thus undoes the partial twist, with ready delivery. In other cases the animal has to be cast on to the side. If the twist is from right to left cast her on her right side. The animal must then be rolled over to the left while the operator seizes hold of the fœtus and presses to the right when the animal is directly on her back, steady traction being put on the cords the uterus rights itself and delivery is accomplished.

Constriction of the os uteri in the cow is known in Cumberland as "horny lyer." When the pains are very strong a good dose of opium—two to three drachms suspended in hot water—or from six to eight drachms chloral hydrate should be given, while the os uteri should be smeared with a drachm or two of ext. belladonnæ. When in the course of 12 to 24 hours the animal may calve all right, but sometimes we come across a sort of cartilaginous ring round the os through which the hand cannot be passed. This ring having a flange in breadth of $\frac{3}{4}$ to 1 inch and about $\frac{1}{8}$ to $\frac{1}{4}$ inch thick. This must be cut on the upper portion and also on each side. Smear well with belladonna; give a good sedative—opium or chloral—and *wait patiently*. But sometimes relaxation does not take place; then delivery has to be got at by cording feet and head, bringing them into the passage, and by taking plenty of time and care delivery may be successfully accomplished.

The Cæsarean section. This operation may be performed on the mare, cow, sheep and pig where the offspring is alive and of more value than the mother. I have been successful on many occasions in saving the lives of calves, foals, lambs and pigs, but at the sacrifice of the mother.

Retention of the fœtus. This is sometimes seen in cattle. At the end of the period of gestation the cow shows all the signs of approaching parturition, the udder is distended, teats pointed, etc., but no direct labour pains are evinced. Finally the ligaments tighten up and the udder scales away; the animal though feeding loses flesh. In a few months after she begins to pass various bones per rectum; or the fœtus may become mummified, and its presence be not indicated until after slaughter. I have met with these cases.

Sheep occasionally in frosty weather have eversion of the upper portion of the vagina with the os constricted, the animal having severe straining. Apply to the parts extract of belladonna and return to position, keeping it there till the os dilates with stitches across the vulva, and give linseed oil eight to ten ounces with four drachms tinct. opii. B.P. If the weather is mild these cases may do well, but if the frost continues they generally terminate in inflammation and gangrene.

Inertia of the uterus. I have occasionally come in contact with cases of this where the uterus and vagina are intensely dilated, the fœtus lying in natural position, yet no attempt to expel it is made by the mother. I have had most success by introducing the hand into the uterus and seizing hold of the fœtus, drawing it into the passage slowly and gently. Extraction is generally accomplished without any assistance from the mother.

The placenta or afterbirth in the mare ought never to be allowed to remain more than 8 to 10 hours after birth, more particularly when the mare is on dry food in the stable, as it most frequently brings on septic laminitis. In some seasons I have seen this almost resembling an epidemic, having had into the teens of cases in two months resulting in laminitis. All this may be avoided by timely removal of the membranes, which must be carefully done, as the smallest piece left is quite sufficient to cause a great deal of constitutional disturbance, and in some cases septic poisoning, and death. Cattle, on the other hand, can retain the fœtal membranes for from six to eight days with little or no constitutional derangement. These cases in cows are much more frequent now than formerly. I have attempted their removal at from six hours after calving until the 8th day. At the 5th and 6th day they may be sometimes successfully taken away. I generally inject into the uterus 8 or 10 quarts of tepid water containing a small portion of Jeyes' fluid or Sanitas, then by introducing the hand and by gentle traction and torsion of the membranes they may be successfully removed. I have great objections to cutting small pieces off the portion of membrane hanging outside, and have further objection to farmers hanging a horse shoe or other weight to it. When the animal is feeding, milking, and chewing her cud I recommend leaving it alone until the 6th or 7th day in winter, and 5th or 6th in summer, rolling the membranes which are hanging outside into a knot, to be out of the milker's

way. After removing the placenta from the mare and cow, I generally inject into the uterus five or six quarts tepid water containing one ounce tinct. ferri. perchlor., which I find to be the best antiseptic.

In all cases of parturition in the mare or cow—more particularly the latter—immediately they show signs of calving they should be put into a nursery box, and never be allowed to calve in a byre containing other pregnant animals. This latter, I do honestly believe, is one of the causes of abortion.

Putting the cow in a box and leaving her and the calf for three or four days (milking the udder occasionally by the hand) is also one of the best preventives of milk fever in my opinion.

There are many accidents the result of parturition, more common in the mare than in the cow, such as the fore foot of the fœtus being forced through the roof of the vagina or through floor of the rectum and out at the anus, or the anus and vulva—from the same cause—are made into one common opening. Immense sloughing usually takes place in these cases.

Eversion of the uterus. This is not of a very frequent occurrence in the mare, but often happens with the cow. In the former great care ought to be taken immediately the uterus is in sight, if the mare be in a standing position, to keep her on her feet, and a prompt attempt be made to return the organ. If lying down when the uterus is first noticed she ought to be kept down; legs tied, quarters elevated, and the uterus supported with a large cloth and return attempted as quickly as possible. In the cow, should the animal be down and the fœtal membranes attached, the uterus with the attachments should be placed in a large vessel containing a quantity of warm water and milk. The uterus should be lifted into the vessel by means of a large cloth. When in the water the placental membranes should be removed by pressing the colytedons together, the cows forelegs being tied to prevent her rising. The hind quarters should be elevated by means of bags of chaff or bundles of straw, then by first pressing back the neck of the uterus and kneading the body in—on the lower side particularly. As soon as the body of the organ is within the pelvic bones the hand must be placed on the everted end of the horn and pressed gently forward thus returning the horn into its proper position. If the point of the horn is not properly returned the whole uterus is easily everted again. Pressure should never be applied when the animal is straining, always give to her. Cases are frequently met with where the womb has been out for five or six hours. The mucous membrane is very much congested, jelly-like, and very stiff from infiltration of fluid in the sub-mucous tissue. Before attempting reduction in these cases the uterus should be scarified with a lancet all over, and kneaded with the hands to make it pliable. Where the animal is standing the uterus should be supported by a large cloth held by two attendants, one on each side. Before attempting reduction trusses of straw or bags full of chaff, hayseeds, or sawdust should be placed on each side of the hind legs and one between, so that if the animal lie down the quarters will be readily elevated. After reduction 5 or 6 quarts of tepid water containing one ounce tinct. ferri. injected into the womb acts as a good antiseptic and causes the uterus to contract closing up any lacerations which may have been caused in reduction. Stitches may or may not be put across the vulva, or a truss may be put on to prevent recurrence. Should the animal strain and press a great deal after returning, the best sedative is to drive her into a pond and let her stand there up to the knees for fifteen or twenty minutes, drinking the water if she is so inclined.

Eversion of the bladder. This is also now and again met with. It is easily known by the bluey green colour and the constant dribbling of water down the thighs. By careful examination you find the meatus urinarius with the portion of the bladder hanging out. By gentle pressure it is readily returned, but is very bad to keep in its place; but by keeping the animal moving about and dashing a few quarts of cold water against the vulva it retains its position.

In conclusion I must name another matter, and that is I strongly recommend the tying of the navel string with some antiseptic cord both in foal and calf. This, I have every reason to believe, is one of the best preventives of those septic diseases known as "joint-fellon" and "navel-ill." I am sorry to say that I differ with my old friend Professor Williams in this matter, but unsanitary surroundings have a deal to answer for in these diseases.

LINCOLNSHIRE VETERINARY MEDICAL ASSOCIATION.

A meeting of the association was held at the Angel Hotel, Peterboro', on Wednesday, July 4th, 1894. The President, H. J. Goodall, Esq., Melton Mowbray, took the chair. There were also present:—Messrs. Dickinson, Boston; Freer, Uppingham; F. L. Gooch, Stamford; J. W. Gresswell, Peterboro'; J. Mackinder, Peterboro'; T. A. Rudkin and Capt. Russell, Grantham; James Smith, Huntingdon; W. P. Weston, Oakham; J. A. Robinson, Hon. Sec., Market Deeping. Visitors: Col. Powell, Melton Mowbray; Dr. Benson, Market Deeping; Messrs. G. & J. Hunting, Peterboro'

Apologies for non-attendance were received from Dr. Fleming, Profs. Williams, Walley, Penberthy, Pritchard, and W. Owen Williams, Messrs. Greaves, Hartley and T. E. Smith.

The SECRETARY said he had received a letter from Mr. W. Hunting in which he deeply regretted his inability to be present owing to an important Council meeting being fixed for that date, also a letter from Mr. Wragg, in which he thanked the Society for the honor they had conferred on him by electing him an Honorary Associate of the Society and regretting that he was unable to personally thank them as he was compelled to attend the Council meeting.

A letter was read from the secretary of the Eastern Counties Society, enclosing a resolution and asking the members to express an opinion that the fees paid to veterinary surgeons for examining horses for Insurance Companies were too low. A short discussion ensued and as the general opinion seemed to be that nothing practical would come of the matter as men would always be found to examine at existing fees, the letter was ordered to lie on the table.

PRESIDENTIAL ADDRESS.

Mr. H. J. GOODALL, M.R.C.V.S.

According to custom I suppose I must now occupy a little of your time in giving you what we in this Association expect—a short Presidential address. Fortunately we have not any burning questions that would be likely to evoke great differences of thought, and considering the too short time at our disposal this afternoon for the important discussion which is coming on, I will not detain you many minutes.

I must confess to mingled feelings of surprise and gratification when I first realized the honourable position in which it has been your will to place me, and now that I am called upon to discharge the functions which devolve upon me, and which I think ought to have been discharged by a senior and more venerable man, I assume that in your judgment I may be attaining to

that honourable degree. I have too keen a sense of the responsibilities of the office ever to have coveted the honour, nevertheless I thank you most sincerely for the great kindness you have shown me. It would be the sheerest affectation to pretend I am not deeply gratified, for any man must be proud to preside over meetings such as we have in the L.V.M.A. where not only all the working staff but every member of the Association are a real hard working, jolly lot, all doing their utmost to help forward the interests of the profession and this Association in particular. I feel quite certain the same help and hearty co-operation which you have given to my predecessors will be accorded to me, and that my term of office will be one of great pleasure.

I think it was Lecky who specially commends the attention of students to the history of institutions in the constantly fluctuating conditions of human life. He said:—"No institution had ever remained for a long period unaltered, sometimes we changed beliefs, changed conditions. Laws of original utility had become simply useless, obstructive, and corrupt; and though by mere passive resistance they might continue to exist long after they had ceased to serve any good purpose, they would at last be undermined by their own abuses. Other institutions on the other hand shewed the true characteristic of vitality—the power of adapting themselves to changed conditions and new utilities. Few things in history were more interesting and instructive than a careful study of these transformations, and there was probably no better test of the growth of any institution than the power which it possessed of adapting old usages to new wants."

I have been thinking over the transformations and changes that have taken place in our profession since I obtained my diploma 32 years ago, and with your permission we will take a bird's eye view of the matter, and see if we as a profession show real healthy growth. Please remember the R.C.V.S. has only just completed its Jubilee, so that we are comparatively a very young profession, and have just reasons to congratulate ourselves upon the position we hold to day.

Look at our Schools; they have all grown, whilst the one in Camden Town, in which I am most deeply concerned, has altered to such an extent that no one once inside the building would recognize it as it stood 35 years ago. The student of the present day is surrounded with advantages which were then unknown. Then, four professors and an anatomical demonstrator constituted the staff of teachers and who can deny they did not in their day and generation do noble work, especially when we consider the limited time they had to instil knowledge into their pupils, yet did they not lay the foundation sure and firm upon which we are now building a grand institution whose functions are becoming more and more recognised by the state and the whole animal-loving community. Here we show gigantic growth. What five teachers accomplished in two years, namely, enabled the pupil to obtain his diploma, now requires four years with a staff of twelve teachers. This at first sight looks an anomaly, but let us look at what is required of the student, certainly very much more than could be taught in the old time, and only in keeping with the great educational advancement amongst all classes throughout the country. Then, a pupil paid his fee, and was admitted a student. Now, before he can enter the college as a student, he must give ample proof of his educational attainments. This puts a trained mind in the power of the educational staff, and with such an increase in the number of teachers it naturally follows that more time must be required to impart such a variety of knowledge as is now imperatively necessary if we are to keep pace with the national education. Then, Botany was not an essential and was studied by a few rather as a recreation. Hygiene is now a most essential part of a student's work, and a word constantly upon the lips of every student; then, we scarcely ever heard the word. Bacteriology was in embryo, "without form and void," in fact, I never heard the term during my years at College. Yet this one subject has become a science in itself interesting and instructive to the chemist, botanist, biologist, physiologist, and pathologist. Of course in a short address like this I can only make a passing comment to show the great activity that has prevailed in this one now most important branch of scientific research and to mark our appreciation of the great *life* work of Pasteur, acknowledged to be the father of bacteriology, Koch, Lister, Metchnikoff, and a noble array of others who are actively following up this work. I may remind you that Pasteur's theory of producing preventive vaccines against infectious diseases by the alteration of specific virus is now becoming recognised by all students of preventive medicine, and the student of to-day is being taught aids to diagnosis, if not to curative treatment, by the use of animal vaccines. How far these will enter into the therapeutics of the future is quite beyond our imagination, neither can we conceive the great progress this one science has wrought in the practice of medicine and surgery, for all who are interested in these must be conversant with the general principles of bacteriology. It cannot be expected that a busy country practitioner can go thoroughly into the working details of preparing the different media for cultivation, and watching the growth of various colonies of specific microbes, but we can read the results of others' labours and apply the deductions which they have made to our every day practice, and then we shall be co-workers for one common end—the alleviation of pain or suffering and the mitigation of disease. To those who are not members of the National Association, I would commend the carefully prepared paper brought before that association by Mr. J. A. W. Dollar and the discussion which followed; which clearly show that the veterinarian is adapting these new usages to old wants. I sometimes think there is just a tendency to take our young members a little too exclusively on this science—the dessert and confection one. I mean they are taught to know more about the use of the microscope, the biology of microbes and the chemistry of their products than of the occupants of the stable, cowshed and pasture in health and disease; yet it is through professing to have a special knowledge of these latter that they hope to obtain a respectable livelihood and to command a social status. Microbes, although new to us, are not new creations. They have been in existence as long as disease has wrought pain and sickness, and have only been discovered through the mechanical aids which the ingenuity of man has devised for his assistance, and in nothing is the old adage more true, "What's new is'nt true, what's true is'nt new," or in the words of a very old book, "That which hath been is now, and that which is to be hath already been."

Thirty years ago the "Fellowship" degree was not known, and when the student had obtained his diploma that was not only his qualification to practise the art and science of veterinary surgery and medicine, but a stepping stone (without paying any more fees, and undergoing any other examination) to all the privileges of the profession, both on the board of Examiners and in the Council chamber. But the over grasping anxiety of the embryo Fellow in claiming the exclusive right to these honours made the degree oppressive and abortive. I am pleased to see the R.C.V.S. has at last made this a degree which our young members of the profession may be proud of, and it will be an inducement for healthy hard work for a few years after they have obtained their diploma. I think here we may say—if we do not show energetic growth we show vital germination.

Perhaps never in the history of the profession were its services more maligned by the ignorant, or sought after by the better class breeders and feeders than during the years 1865-66, when rinderpest or cattle plague made such havoc amongst our herds. Here, in passing, permit me to remind you of the great difference between our patients and those of the sister profession. Our patients all have a monetary value, and unless we can restore them to health in a reasonable time, so as to make them repay their owners for the extra cost incurred by our expenses etc., we are not doing the owners any good, although we may have made a very good recovery of the patient. The human practitioner not only uses all the means at his disposal for the alleviation of pain and suffering, but *prolongs* the life as far as possible which is beyond any monetary value. Hence, with lower animals, the stamping out process was resorted to to save the greater number, with the result that rinderpest soon disappeared. I can remember when pleuro-pneumonia could be found in any practice; and what was the usual advice given to the owner? Why, "Clear out, sell all you have." And this was the best policy as far as the owner was concerned; but what was the consequence? Why, the animals which had been in contact (tho' not at the time showing symptoms of the disease) were taken to a "far off" fair or market, and sold, perhaps to several different purchasers in divers distant parts of the country, and these in turn became so many centres from which the disease would develop, and spread by a repetition of the selling and distributing process. The consequence was the country veterinary surgeon always had cases of pleuro-pneumonia on his books, and it was in those days a fruitful source of income. Now that the veterinary profession has been heard, and our advice acted upon, we cannot find a case of pleuro-pneumonia in Great Britian to-day. You may think this a slight divergence from my original text but I think it shows professional growth, for it was the advent of rinderpest that brought the veterinary surgeon prominently before the public, and led to his services being requisitioned and acknowledged by the state, whilst to-day veterinary surgeons in most parts of the kingdom hold the office of inspectors to Her Majesty's Privy Council. As a result of these appointments, and the enforced notification of contagious diseases, we cannot find in our island home a single case of rinderpest, pleuro-pneumonia, or foot and mouth disease, and when we contemplate the immense annual loss which had been caused by the two latter diseases we cannot too fully estimate the benefits conferred upon the general community by the stamping out Orders.

Sheep scab is not so prevalent as it used to be. Swine fever and glanders remain as two dark spots about which I will not say anything.

With all this growth what are the prospects and position of the veterinary surgeon to-day? Is his social standing any better than it used to be? Is the tree with all these extra robust branches, which are becoming yearly more expensive to cultivate, yielding the veterinary surgeon better, or more substantial fruit? Does society still look upon him as a superior groom? This subject has been well handled by our friend Mr. Hunting, and has been fairly well discussed, and I think there cannot be two opinions upon this point, although we must all be alive to one fact—the country practitioner is sadly handicapped by the agricultural depression. Ordinary farm stock has depreciated to such an extent that we cannot make the same charges we used to, and we have to work very hard to make a living.

I should now like to draw your attention for a few minutes to another institution which the requirements of recent years have called into existence, I allude to the *National*, not the Manchester, but the Nation al Veterinary Benevolent and Mutual Defence Society. A great number of veterinary surgeons from all parts of the country have become subscribing members, but very few give it the personal support at its meetings which the importance of the society ought to command. This society is open to all and every member of the profession, who after he has joined has not only a right to its privileges and protection should he be so unfortunate as to require them, but he has a right to attend the general meeting where, amongst other business that may be transacted, rules may be revised if thought necessary. If a member is not satisfied with the existing rules and methods, why does he not go and ventilate his ideas at the proper time and place?—not find fault with those who have devoted their influence, time, and money for the weal of the veterinary profession. If the members will not attend the meetings, the executive, though disappointed with the meagre number present to do the business of the society, must take it for granted that absent members *are perfectly satisfied with all that is being done;* but to keep away from the meetings, and find fault and grumble with what has been and continues to be done is a very equivocal way of expressing our gratitude to those who have not only started the society, but have worked so hard and willingly that they can show a handsome balance in the hands of their bankers. Judging from the dark clouds and annoying legal actions that have been brought against veterinary surgeons after discharging their duties conscientiously, it becomes a matter of duty we owe to ourselves to make provisions against any contingency which may arise in our every day practice, that would mitigate the worry and anxiety of the individual who may be threatened with a process at law. Through the indefatigable exertions of Messrs. Greaves, P. Taylor and others, this is the only institution through which we can secure such advantages. Should any member of the Defence Soceity be threatened with a law suit he will find the above named gentlemen staunch friends, who would not only thoroughly investigate the merits of the case as to whether the applicant could be defended or not, but whose fatherly sympathy would do much to remove the hateful stigma which he felt resting upon him. Therefore if there are any in this Association who are not members of the National Benevolent and Mutual Defence Society let them become so at once: and remember, subscriptions are not all it is our privilege to give. It is our duty, when possible, to give our countenance and personal support at the general meeting, so that its National character may become more established.

There is just one other institution I will mention—these Associations. They have in a few years become established institutions all over the country, and are becoming recognised as a motor force, supplying the strength which gives vital energy to our whole body politic. It is through these associations that wants make themselves known in the profession, and, through impartial discussion, the best way of supplying those wants. These Associations now govern our Veterinary Parliament or Council, through these the qualifications of aspirants to the honour of sitting upon the Council are thoroughly discussed and the units of the profession become more conversant, not only with its requirements but also with the characters of those forming its governing body. Now that the members forming the Council are elected by ballot, every member of the profession has an opportunity of being represented on the governing body by voting for the candidate he considers best fitted to carry out the needs of the profession with becoming dignity and honour. Another great end which these associations serve is to gather the members of the profession into one great fraternal whole. It is written in a very old book "as iron sharpeneth iron, so does a man's countenance that of his friend." I think very few of us ever leave these meetings without a feeling of

genuine satisfaction that we have profited by an interchange of ideas. How often it happens that we, in the narrowness of our home life, have been adopting a special method in some particular every day work which we have thought *par excellence*, but when conversing with a brother practitioner we are often astonished to find he has a much more simple, and quite as effective way of doing the same thing. It is in these Associations that our young members gain much useful information, old members establish a friendship which lasts for life, whilst others who from some cause often think they have a grievance against a brother practitioner, when they meet around this board, or the convivial one which follows, frequently find the coolness — or something worse, which has sprung up between them arises from a petty, and often an imaginary wrong, which when explained enables them to give the good old English grip of friendship, and remain fast and true friends working side by side with every good feeling towards each other fulfilling the motto of our College "Vis unita fortior" and thus lifting us as a profession to a higher social platform. (Applause).

The Clinical Aspect of Fractures—Discussion.

Capt. Russell opened the discussion on this subject, which was treated by William Hunting, F.R.C.V.S., in a paper at the last meeting. Capt. Russell said he must thank them for having asked him to open the discussion, although at the same time he felt that had they called upon any other member of the Society they would have done quite as well as he could and probably better. Mr. Hunting's paper was not one that required any controversial argument, it was a paper of marked common sense, and showed considerable thought and observation. Mr. Hunting was a gentleman who took a great interest in his profession and made notes as cases occurred. Mr. Hunting referred to the fact that they could receive benefit from the records of others or from records of their own, and to do as they should do they ought to keep records of their cases.

The great difficulty they had to contend with in the case of fractures was to keep the broken ends of bone in apposition, and in no subject was this more difficult to do, than to control the fractures in the horse. In nine out of ten cases if they slung them they did more harm than good. If they gave chloroform in a standing position he thought it did more harm than good. He described a little adventure that happened to him in the matter of administering chloroform to a horse by a new instrument which was a total failure although he gave something like twelve ounces. It was such a failure that when they came to operate the horse soon sent them scattering. The administration by this instrument had no effect on this horse, and he found it was of no service at all. The first point as to fractures was with reference to the causes, and here again it was impossible to dispute Mr. Hunting's statement that they were due to external violence and concussion, and sometimes to want of animal matter or of earthy matter in the bone. He produced the humerus of a three year old Irish colt, which showed a distinct want of animal matter; the bone was wonderfully brittle—almost like lime, and they could break it in their fingers. In another case of a fractured pastern he dissected it with the parts *in situ*, and thus showed the actual effect of fracture from the natural point of view. This was a result of concussion; the horse was turned out in a grass field, was frightened by a dog, and galloping rapidly round the field suddenly threw up its leg and fell down. He diagnosed fracture of the pastern, and being an old horse they had him destroyed. Had it been a valuable mare he should have thought it necessary to bandage it up and try to save it. He found if he could only get cases sent in early enough and wrapped them in plaster of Paris bandages, that they might be cured. He had only known one case in which a horse could do rapid work after fracturing the os suffraginis. They had a horse at Grantham which had fractured that bone and no one would know that the animal had recovered an injury to the foot. The fracture of the os suffraginis always seemed to break the top of the bone into splinters. In cases of fracture they got shivering of the muscles and pain on pressure, and if the animal was working lame they would find excessive pain by the animal getting out of the way or drawing itself back. They had no difficulty in diagnosing fractures in the region of the hip bone or pelvis. He had a horse under treatment for six weeks in slings. He was confident that that there was some kind of fracture of some portion of the pelvis. The animal had shied at a dog, slipped, and fallen on the curb of the pavement. There was exceeding lameness and inability to rise—he could get up only with a great deal of assistance, and if he were on the other side he could only sit up like a dog. He had taken him out of the slings only that morning and he thought there was a chance for him. He had no doubt there was a fracture although he could not discover any displacement of part of the pelvis. They had an adhesive plaster very useful for outside application; it did not dry sufficiently stiff for inside bandages, but it would stop on on a starch bandage for six weeks. They wanted something that would set as hard as a brick over a starch or plaster of Paris bandage. On foals or horses he always placed strips of tin with gutta percha or paraffin cardboard. This latter was very useful for setting dogs' legs; if it was coated over with paraffin it was malleable, and they could shape it with the limb, and it became as hard as a board. It was bad practice in his opinion to tie up a horse or a cow with a broken extremity. They would move themselves about better by themselves, and would do better than if tied up to a manger. One reason was that if tied up they fidgeted, and wanted to move about, and put a great deal of pressure on the broken limb. If they allowed them to move about as they pleased they took care of it. He had a case of compound comminuted fracture of the tibia. The bone was sticking through the skin. There was a wound three inches long, and a great deal of muscular injury. He advised his client to have it destroyed, as the case would cause much anxiety. But after he left the man bandaged him up in the most extraordinary manner, and in some way he had saved him. He showed the case to him two months after and it was certainly a recovery; there was an ugly distortion, but the animal was living and grazing. He did not hesitate to say that if they, as professional men, had bound up the leg, the animal would have died from mortification; and if he had lived, they would have been called bad surgeons. He had a very extraordinary case of fracture in the horse some years ago. He was a very fat horse and was standing in a very small standing, and he was found dead. Of course it was said he was poisoned, but from the pallid condition he thought the animal had bled to death. It appeared that in lying down he had brought his ilium against the standing post, which was of oak, nine inches square, and the superior spinous process of the ilium had broken and pierced an artery in the pelvis and the animal bled to death as he lay. He produced a specimen of a foal's tibia which was fractured by the mare treading on it. He attempted to set it, but had to destroy the animal, for as its hind quarters became heavier it moved the bone at its axis and it crossed its hocks and could not walk. It was interesting to know what nature would have done in the space of five months. He pointed out how smooth the bone was where required to be smooth and rough where smoothness was not necessary. This was a case of a fractured ulna, which was one of those bones like the calcis and patella where they never got a bony union between the fractured

portions. He thought it was recorded in the human subject there had been a bony union, but in 99 cases out of 100 in fractures of these bones they must get a fibrous union. They preserved this animal alive for eight weeks to see if they could get this fibrous band well matured. He was once called to a horse which was supposed to have a fractured hip. Its body was bedewed with sweat, it was in a tremendous pucker, and could not move its limb laterally, but dragged it behind it, and it hung suspended. He diagnosed fracture of the hip and recommended it to be destroyed. He felt convinced he could hear crepitation through the gluteal muscle. He killed the horse and cut down into the quarter and there was no fracture at all. He was of opinion that fractures at the base of the skull were very common among young horses, but they did not hear much about them. He had in his possession seven or eight specimens of fractured skull of all ages, foals and old horses. This one was a four year old, and when a two year old during lunging the colt reared up and fell back; he was noticed to stagger, and was taken away to the stable bleeding from one ear and one nostril. He diagnosed fracture of the base of the skull, it having a dilated pupil with staggering gait, and could not stand. He was very giddy; breathed slowly, and his pulse was hardly perceptible, and when it could be felt it was no more than 24 or 26 to the minute. He placed ice on the back of his head, and had two men to keep him steady. Two days after the colt went on well, but he said to the steward that he would have to kill him as he would either become paralysed or die. They kept him up, and broke him in, but they could not make him go forward; he could of his own free will but would not do so when asked. He found the animal was totally blind of one eye, and had paralysis of the optic nerve. There was an enlargement on the back of his head something like a small poll sire. They turned him out for another year and finally had him slaughtered. Where the fracture took place there was a piece of bone sticking up quite half an inch through the centre of the fracture. There was a certain amount of deposit, more outside than in, and there was this spicula of bone sticking up, the horse having lived three years after the fracture occurred, and then was destroyed. They also had foals dying from other causes which also had fracture of the skull. Nature was wonderfully kind, and it was marvellous how beautifully she repaired the pieces of the skull. In the case under notice the exostosis took place altogether on the outside so as not to interfere with the brain.

He had lately had a good case of fracture of the lower jaw. This horse some weeks ago showed temper when being broken to harness. The harness was undone and cart run away, and no sooner did the horse find himself free than he threw himself on the ground and then rushed against a wall and smashed his lower maxilla. Three teeth were hanging down and the bone was in two pieces, and the other side split right through. One could have wrung the whole mouth off. They made a lateral incision and with soda water wire drew the teeth together; with ordinary suture wire they bound all round the edges of the teeth and held the parts in position, and took out the centre incisor with a large piece of the bone. They kept him on cut food and suction, and he had made a splendid recovery, and they would only notice that the centre incisor was gone. The next tooth would have to be removed, but the bone had united splendidly; the wires were removed last week, and the horse was breaking quietly. He showed a star fracture on the scapula, which was done by a kick. It was broken right into the joint, but the joint showed no signs of disease. After keeping it five or six weeks it had to be destroyed. He had an interesting case of false union of radius of a dog. It was a very valuable fox terrier and had its radius smashed into 20 or 30 pieces, there being a compound fracture. When brought to them it was very nearly in a state of mortification; it was very troublesome and kept getting the bandages off. In the result, in two months the dog quite recovered but it had a false joint. He described the process of bandaging in this case and said that only a professional man could tell that the bone had been fractured.

He believed there were many cases of fractured extremity of a horse which if properly looked after would make quite a useful recovery, particularly in mares. A man had a mare kicked during the night and the off hind leg was broken just above the fetlock. She foaled during the night, and the foal was standing beside her, and she was standing with a swinging leg. They set the leg over and over again in iron bands, plaster of Paris, starch, glue and everything they could imagine eight or ten times. One day she was found sitting on the manger with both hind legs and propping herself up with her fore feet; noticing this they got a pole and covered it with sacks, thoroughly padding it with straw, and she sat upon it with comfort; she sat and rested on that pole 18 hours out of the 24 and she was afterwards turned out. This piece of wood was taken out into the field and she became sound, spending from 4 to 16 hours a day sitting on this piece of wood. She worked and had foals for six years, and was one day found on her back in the dyke dead. He showed a specimen of what Mr. Hunting called a deferred fracture. This horse was kicked on the forearm. If they examined that, they would find two distinct causes. There was no fracture to feel and no man could have taken that as an actual fracture. The fractured dorsal vertebræ produced were parts of the back bone of a hunter. A lady was riding him over a gap and the horse injured itself. It jumped again and got worse; the lady jumped off and a man jumped on and rode this horse on the road to Grantham, and the horse laid down and never got up again. The fracture did not seem to go through the canal, but the injury was sufficient to rupture a blood vessel and cause the clot to press upon the spinal column, and so caused death. Capt. Russell concluded his interesting review of the series of fractures amid applause.

Mr. Jas. Smith congratulated the President on the happy position in which he found himself, and also congratulated the Lincolnshire Veterinary Medical Association in having such a President. He was very sorry Mr. Hunting was not there as he should like to have thanked him personally for his excellent paper and for the kind way in which he had responded to his invitation to give them that paper, the subject of which he had the pleasure of suggesting to Mr. Hunting. There was one remark made by Mr. Hunting to which they as country practitioners could scarcely agree. He fanced Mr. Hunting said that the majority of cases of fracture were caused by direct injury and not by muscular action. His experience he thought showed that fractures were due very much to muscular action and not to direct injury outside. A horse shied at a piece of paper and fractured the os suffraginis. A horse was seen to play in the box and fall to the ground, having fractured the os corona in eight pieces. As to deferred fracture, a mare he knew very well was being driven along a road and slipped in a rut and went very lame. She was driven a fortnight afterwards and was sometimes sound and sometimes lame, but he gave his opinion that she had a broken leg, and would have to be shot. She was kept for three weeks after that and at the end of that time she got down. She was shot and it was found that the femur was broken into pieces. Talking about plaster of Paris bandages, a mare fractured her pastern jumping over a hurdle. Her foot was turned round, but the mare with a plaster of Paris bandage made a sufficient recovery to walk a considerable distance, and was turned out in the park and bred from. He did not doubt but that was the action of the muscles on the bone that caused that

fracture. There was a case of compound fracture of the metacarpal bone of the calf. He took the leg off below the knee and the calf got so fat on three legs that it had to be killed. The most ghastly fracture he ever saw was in the case of a horse playing about behind a cart on which was a ladder. The horse struck the ladder and the frontal bone was smashed in and one eye pushed out, and the brain was only just covered. If they closed the horse's nostrils he could breathe through his wound in the head.

Mr. MACKINDER said Mr. Hunting's paper had afforded him very great pleasure. He had met with several cases of deferred fractures, and one he remembered specially was a case of a cow which met with an accident and walked for three or four days. She was very little lame and grazed about, but about the 4th day she went very lame, and the boy said he had heard a crack like a gun and it was found there was a fractured bone, but there was nothing to see. It was turned out and broke down, and it was found that the pedal bone was completely fractured. He understood that Capt. Russell said they very rarely got a bony union when they had fracture of the ulna or radius, but he could show him a case where there was a complete recovery. He thought the less they slung them the better. As to fracture of the base of the skull, a foal intended to be shown was taken to be shod. It fell backwards and fractured not only the base of the skull, but also the wing of the atlas. He applied ice, but he lay insensible for two hours. That foal was also blind of the near eye. The os suffraginis or pastern bone might heal itself. He remembered a case of a groom who was leading a mare when it fractured that bone. He plastered it up and the mare had been breeding since. She broke that leg completely in two, but it was set, and was as good as could be. A man accustomed to bone setting told him they kept on boiling starch until it formed into glucose, and that would set as hard as anything. He understood that was frequently used on the human subject, and among those people who made bone setting a speciality.

Mr. FREER narrated one of the most interesting cases of deferred fracture that had come under his notice. It so happened that a few days ago a hunter was brought home very lame, and he saw him the following morning. There was a swelling between the knee and the elbow, and he told the people that the bone was seriously injured if not fractured. In the course of a week the horse made considerable improvement, but they allowed the horse to lie down and they found the radius sticking through the skin. As to deferred fractures he produced the metatarsal bone of a four-year-old hunter that fell lame in jumping a fence. He was walked home, over four miles, and he bound it up tight with a calico bandage. That he diagnosed as a case of fracture of the os suffraginis. He attended next morning and bound it up and found a little swelling on the metatarsal bone, and then it occurred to him that the metatarsal bone was cracked as well as the os suffraginis. He got him into slings, but seeing that he was doing more damage than good in them he removed them. They kept him for some time and he was very much improved. Soon after he got a telegram, and found the horse had got down in the night and knocked against the wall and so brought on the fracture. In the case of the os suffraginis of a five-year-old horse of a medical man he diagnosed a split pastern, and he applied acetum cantharides to the joint. He produced the dentata of a six-year-old horse showing extensive osteo porosis, and the bone from the atlas to the sacrum was covered with periosteal deposit. A pair of horses were cutting grass and the mare put her foot into a depression and smashed the tibia into 50 bits. As to fracture of the base of the skull, ten yearling colts were kept up for castration and one of them got away and smashed his skull to atoms.

Mr. DICKINSON said with reference to the little experiment spoken of by Captain Russell for administering chloroform to the horse by the new instruments, he had found it most useful for producing anæsthesia in the dog, and he used ether; but he did not think it was of any good for horses. As to fractures, his success in setting had been great. He had a photographed group in his establishment of 27 horses which were at work in his district and they had all had fractures, and they had all been treated in the same way, in slings. In the case of a horse worth £400 or £500 brought to his place with a fractured tibia, he said he had put him in slings and described the mode of treatment. The bending over spoken of could be obviated by strong webbing. He also suggested how shortening could be avoided, and said he never destroyed, but he would have the animals brought to his infirmary, and he believed that by mechanical contrivances many horses that were now shot need not be destroyed but could be put right. In one case (specimen produced) he thought the fracture was owing to the conditon of the bone, there being a great deficiency of some natural element in it; and they could not say whether this was due to concussion or muscular contraction. He believed the majority of split pasterns were due not to muscular contraction but to concussion. He congratulated the President on the position he occupied, and was glad to hear him refer to the Defence Society, there being no Society which was more useful to the veterinary surgeon.

Dr. BENSON said for the human subject they now produced anæsthesia by ethel-bromide before using chloroform.

The PRESIDENT produced specimen of fracture of the head of the femur, and said he diagnosed fracture of the acetabulum by the peculiar rise in the gluteal muscles. He also showed two cases of fractured pasterns. One was a fracture and the other was only a slight crack, and had that latter case gone into the knackers' yard it would probably not have been seen. He also showed a specimen of fractured sessamoid. The upper fracture was of recent date and the lower had been done previously. He had known cases of fractured pasterns recovering, and eight years ago a mare broke her back, and she lived for eight years, the bones being all fixed together. As to deferred fractures he had known several cases where the horse was only walking slightly lame. In one case he could feel a fissure and he diagnosed fracture of the tibia, and that horse went out to walking exercise every morning. Ten days after he went again and the leg was swinging, and on dissection he found the top broken into seven or eight pieces. He always treated with very great respect a kick on the outside of the arm or on inside of the thigh.

Mr. WESTON cited a case of fracture of the hip joint which he put into slings for three months and the mare got quite sound, but afterwards got down and ricked her back.

Mr. GRESSWELL cited a case of a fractured metacarpal in a mare, the bone protruding through the skin. In that case he amputated the leg and the mare, which was due to foal in about a week, foaled directly. He dressed the mare, and attended to her and she brought the foal up. In a case of broken sessamoids he held that was due to muscular contraction and not to concussion.

The SECRETARY, by the unanimous wish of the meeting, was directed to write to Mr. Hunting thanking him in the name of the Society for his very excellent paper, and expressing a hope that his absence on that day might be atoned for on many future occasions.

Mr. FREER then proposed a vote of thanks to the President for his conduct in the chair.

This was seconded by Mr. GOOCH, and the President having suitably replied the meeting terminated, and the members and visitors adjourned to dinner.

After dinner the usual loyal, patriotic and professional toasts having been given, Mr. Freer said he thought they ought not to separate without expressing their sympathy with one of their honorary members, Professor Walley, in the very severe loss he had sustained by the sad death of his son. He was sure Prof. Walley had the heart felt sympathy of every member of the Society, and he proposed that the Secretary be directed to express to him the condolence of the members there present.

This was seconded by Mr. Dickinson, who said that he retained very pleasant memories of his friendship with Prof. Walley during his college career in Edinburgh, and supported by Capt. Russell and carried unanimously.

The toast of "The Medical Profession" was responded to by Col. Powell and Dr. Benson, and that of "The Visitors" by Ald. G. Hunting and Councillor Jos. Hunting in an entertaining speech. The health of "The Host and Hostess" terminated the proceedings.

JOHN A. ROBINSON, *Hon. Sec.*

ROYAL COUNTIES VETERINARY MEDICAL ASSOCIATION.

The summer meeting of this Association was held on Friday, 29th ult., at the Clarendon Hotel, Oxford. The weather was delightful and the gathering proved a perfect success in every respect but one—the attendance of members being regrettably and unaccountably small.

LUNCHEON.

On the hospitable invitation of the President for the year, Mr. J. P. S. Walker, F.R.C.V.S., of Oxford, the members and visitors had luncheon together at the Hotel at 1 o'clock. The President occupied the chair, supported on his right by the Mayor of Oxford, Alderman Walter Gray, and on his left by Professor Penberthy and the Hon. Sec., Mr. J. Sutcliffe Hurndall; the vice-chairs being filled by Mr. J. D. Barford and Mr. A. L. Butters respectively.

At the conclusion of an excellent repast, the President said it was unusual to have speeches at gatherings of that desciption, but he should that day depart a little from the custom. Members of the veterinary profession were all loyal subjects, and he would ask them to drink a hearty bumper to Her Majesty the Queen. (Cheers).

The PRESIDENT asked them to join him in another very hearty bumper to the health of the Prince and Princess of Wales and all the members of the Royal Family, remembering particularly our baby Prince. (Cheers). He was sure it was the wish of everybody that the young Prince may long be spared, and grow up to be a useful member of Society, and at some distant future date to rule this nation wisely and well. (Cheers.)

These toasts were most loyally drunk.

The PRESIDENT said he was sure they would all be very pleased to drink the next toast that of "The Mayor and Corporation of Oxford. (Applause.) Those who lived in Oxford had great reason to be proud of their ancient and illustrious city, for in many respects it would bear favourable comparison with any city in the world. He could assure them that Ald. Gray, who honoured them with his presence that day, was "the right man in the right place." He was fully alive to all the interests of the city, and filled his important office with dignity and tact. (Applause.)

The toast was honoured with cheers for the Mayor and Mayoress.

The MAYOR said he was very much obliged to them for the very kind manner in which they had received the toast. The Mayor of a place like Oxford had to perform many functions and fill many parts; and as the first citizen of Oxford for the year he was very proud to be permitted to welcome that Association that day. (Applause). He thought it a compliment to Oxford that the city should have been chosen for central meetings of that character. He had known their president, Mr. Walker, for many years, and in various capacities, and it gave him great pleasure to be there as that gentleman's guest on an occasion when he was presiding over so important and representative a gathering of members of a learned and most valuable profession. (Applause).

Prof. PENBERTHY said he had had the honour done him of being asked to propose a toast which he was sure would be received in extremely cordial fashion—that of the Medical Profession—a toast which they frequently put in the form of "The Sister Profession." As their knowledge of matters medical advanced, they all found that they were coming to one point, and that point was governed by the axiom that there was but one medicine; but one pathology, though there might be two practices; one set of men devoting their knowledge to the treatment of diseases of human subjects, and another set of medical men directing their express attention and knowledge to the treatment of the diseases of the lower animals. As their views became extended, the practitioners of both branches of medicine became more united, and more dependent on each other. They as veterinary surgeons could only claim in medicine that they were second; they could never hope to occupy the proud position of being first, because that must always depend on the relative value of the patient. (Hear, hear). The patient or practioner of human medicine had a value—he allowed often imaginary—which was beyond price. The most helpless and most hopeless infant in the slums of Whitechapel had a life which could not be valued at price of money: the grandest horse had his financial value. There must always exist that little separating barrier. (Hear, hear.) Veterinary surgeons were bound to the practitioners of human medicine by bonds which were very strong—bonds of obligation which they were always open to allow, and always anxious as far as possible to repay. They had, as a profession, received much from the pioneers of medicine who were practitioners on the human subject, and they hoped as medical education advanced they might be able to repay with interest what they had gained. (Hear, hear). He asked them to drink the toast very cordially, and had much pleasure in coupling with it the name of Dr. McLachlan. (Cheers.)

The PRESIDENT announced that Sir Henry Acland, the Regius Professor of Medicine in that University, had asked him to express his great regret at his inability to attend that day. Sir Henry would have much liked to have been there, but that was the last day of the medical examinations, over which he was obliged to preside. Several other medical gentlemen wished also to express their regret at being unable to attend, three having gone to London on a special consultation, and two others being also out of Oxford.

Dr. MCLACHLAN, responding, said he did not know much about medicine as specially applied to the lower animals; but he quite agreed with Prof. Penberthy that the behaviour to medicines was practically alike in the lower and the higher animals, it was only a question of degree. The members of the veterinary profession could not ask questions of their patients, but could only interpret signs, as was the case with a doctor dealing with infants or with such diseases as meningitis. But the same medicine was just as powerful to cure in the one as in the other. There was really no reason why he should not do a little veterinary practice and they a little human. There was no particular virtue in the name by which they were called. In many respects the veterinary profession of course had the advantage, because, for instance, in doubtful cases they did not mind sacrificing a

life, and they never had any difficulty in obtaining a post-mortem. (Hear, hear.)

Mr. BARFORD said he had the very pleasing duty of proposing the very good health of their President, and tendering to Mr. Walker the hearty thanks of that gathering for the hospitality he had dispensed that day. (App.) As an old member of the Corporation of the old town of Southampton it gave him (Mr. Barford) very great pleasure to see the Mayor of Oxford present at that pleasant *réunion* which Mr. Walker had so kindly provided. (Cheers.)

The PRESIDENT, responding, said he was delighted to welcome those present, and only regretted that the attendance was so small. It was very unfortunate that so many gentlemen had been obliged to send excuses. (Hear, hear).

The MAYOR OF OXFORD said he had been asked to propose what he believed was the last toast that afternoon—"Prosperity to the Royal Counties Veterinary Medical Association. (Applause.) He scarcely knew what to say about it, for he had had very little to do with horses, and in what dealings he had had he felt that generally he had been taken in—(laughter); but when he had had to do with veterinary surgeons he had never been "taken in" except that afternoon, when he had been very kindly received by all there, for which he returned them his very sincere thanks. (Applause). He thought the small attendance that day, over which their President seemed rather desponding, showed conclusively that the profession was in a very flourishing condition, for no doubt the absence of so many members of the association was due to pressing professional engagements. (Hear, hear). He believed thoroughly in associations of that kind, feeling that such re-unions, as Mr. Barford had happily described them, were greatly to the advantage of members of a profession, and tended to the advancement of the science in which they were so deeply interested. (Hear, hear). He had the greatest possible pleasure in proposing the toast, and also in coupling with it the name of their hon. secretary Mr. Hurndall, who most worthily represented their interests. (Cheers).

The toast was most cordially drunk.

Mr. HURNDALL returned thanks. His worship the Mayor had, he said, been kind enough to take the most liberal view possible of the occasion, and had in the kindness of his spirit surmised that the large majority of members of that association were so busily engaged that it was impossible for them to snatch even a few hours to countenance that gathering, and give their support to the gentleman who had so kindly come to give them a paper that day. (Hear, hear). He was not so lenient, and he hoped it would go forth in the reports that he said so. Everyone who belonged to that association knew that while he the (speaker) was very straightforward and outspoken in his views as to their duties as members, at the same time he was perfectly willing to make every reasonable allowance for important engagements. But when he told them there were something like 65 members of that association he thought they would agree with him that it was strange that so many had found themselves unable to come. How would the members take it if their President and Secretary made some excuse, and did not turn up? They might be too lenient; and he felt it was high time the members of the association understood something of what their duties were to the association (Hear, hear). He was now in his fourth year of office, and some members had never turned up at a meeting since he had been in office. They only met three times a year; and if gentlemen could not appear once a year it showed either that they had very little interest in the association or they did not appreciate the advantages it offered them. (Hear, hear). There must be a reason, and what it was he should like to fathom, and see it rectified. They were met that day, for the second time in Oxford, under very pleasing circumstances, not only of weather, but in having Prof. Penberthy to read them a paper which he was sure would be of no slight advantage to the association. (Hear, hear). He thanked the Mayor of Oxford very much, and only hoped his kind expressions were a fair reason for the absence of so many of their friends that day. His worship had said that his experience of horse-purchasing had been rather unfortunate. Might he venture to make the suggestion that the veterinary profession existed greatly for the purpose of giving an opinion, and so preserving horse-buyers from being "taken in" by dealers. (Laughter and app.)

THE MEETING.

The business meeting followed, and there attended:—the President, the Hon. Secretary, Professor Penberthy, visitor; Messrs. F. W. Hanks, Wantage; E. Percival Owen, Thame; A. L. Butters, London; John Varney, Winslow; J. D. Barford, Southampton; Wm. Wilson, Berkhamstead; E. J. Mellet, Henley-on-Thames; R. J. Verney, Oxford; R. Craig Tennant, Eton; and Dr. McLachlan, Oxford; Wm. Geikie, Oxford; Clarence P. A. Morrison, John Mitchell, Oxford; and Alfred D. Lalor, Highworth, Wilts.; visitors.

The HON. SECRETARY announced the receipt of apologies from 30 members of the Association, and from 7 gentlemen whom the President had invited to be present as visitors.

THE EXAMINATIONS OF HORSES FOR INSURANCE.

The minutes of the previous meeting having been confirmed.

The HON. SEC., read a communication received from the Eastern Counties Veterinary Medical Association, in the following terms: "I am requested by the members of the above Association to ask you to lay before the members of your Association the following resolution which was carried unanimously at their last meeting, and to ask your members for an expression of opinion on the matter."

[*Copy Resolution.*]

"That in the opinion of this Society the fees usually paid by Insurance Companies to veterinary surgeons for the examination of horses for insurance are too low to be consistent with the responsibility incurred; and that the Secretary be requested to write to other Veterinary Medical Societies on the subject."

The SECRETARY said he supposed the object of the Eastern Counties Association was to be informed whether or no this Association was of the same opinion as themselves on the matter, and whether they would be prepared to co-operate in endeavouring to rectify what he took to be an evil—an evil at any rate as far as the insurance companies were concerned, for no veterinary surgeon of any standing would now act for them at all. (Hear, hear).

Mr. WILSON said he was delighted to have an opportunity of saying a few words upon that subject. Fifteen or sixteen months ago he was asked by a company to examine a horse which was offered to them for insurance. He found that the horse was let out at a very high premium for the season, that the stipulated value of the horse was very considerable, and that the fee they proposed to pay him for going five miles out and five back—unless he could bring it in with his other professional avocations, and they told him very nicely that they did not want him to go out and in specially—was 3s. 6d. (Laughter). He had the pleasure of going and seeing the horse; but he absolutely refused to send in any report, telling them that he thought his time and professional opinion were of more value. If other veterinary surgeons would refuse the paltry fees offered them either a more liberal scale of fees would come into vogue,

or the insurance companies would become defunct. (Hear, hear).

Mr. HANKS said he had declined to undertake such work as Mr. Wilson had, but the fee generally offered was 2s. 6d. (Laughter)

Mr. OWEN suggested a sliding scale, according to the value of the horse to be insured.

The HON. SEC. said there was nothing like corroborative evidence. He also had a little experience with the insurance company mentioned by Mr. Hanks. The Society asked him to go from Blackheath to Rotherhithe, and not only to examine a horse but to examine buildings, and make a general and full report on the whole state of affairs. He received the usual printed form, and in his ignorance went down, never dreaming that such an excuse would be made as was afterwards made. The fee he entered in his book was one guinea, which he thought very moderate for the work he had done. He sent in the account three times, receiving no notice of objection; and at the end of twelve months he put the matter in the hands of his solicitor, who issued a summons in the City of London Court. He (the speaker) lost the day, but he had the satisfaction of being addressed by the gentleman who was presiding (he thought the Recorder) who said, before the whole court, "Mr. Hurndall, I fully sympathise with you in this matter, and I think you have been most grossly taken in; but unfortunately the law does not allow me to make this company pay." Although the company had never demurred to his claim, when they came into court they said their fee was 3s. 6d. for what he had done. They offered him the 3s. 6d. which he returned, telling them to put it down to the general expenses fund, and promising that he would give them a "lift up" whenever he had the chance. He had always done the latter, and that was the only way to serve such people. (Hear, hear.) He did not see what they wanted with sliding scales, they must be paid a suitable fee for the trouble they took. If a horse was only worth £15 or £20 it was as much trouble to examine it as if it were worth £1500, if the examination was worth anything. There ought to be a stipulated fee of not less than a guinea. (Hear, hear.)

Mr. BUTTERS moved "That this Association cordially agree with the resolution passed by the Eastern Counties Veterinary Medical Association and now submitted to this meeting."

Mr. WILSON seconded.

Mr. BARFORD observed that at the Southern Counties Association at Southampton the previous day an exactly similar resolution was passed, and the meeting condemned in the strongest terms the trumpery fees offered.

Mr. HANKS wished to call the attention of the meeting to the conduct of certain members of the profession who took up agencies for those societies, and by so doing supported them. He considered such conduct most unprofessional. (Hear, hear.)

The resolution was then put and carried unanimously.

INSTRUMENTS REGISTER.

The HON. SECRETARY made his report, which was of a perfectly satisfactory character, upon the Association's Instruments Register.

PLACE OF NEXT MEETING.

On the motion of Mr. Wilson, seconded by Mr. Butters, it was unanimously resolved that the next meeting of the Association be held at 10 Red Lion Square.

NEW MEMBER.

Mr. Alfred D. LALOR, M.R.C.V.S., of Highworth, Wilts, was nominated by Mr. Mellett for election at the next meeting.

DOCKING HORSES.

A brief discussion on this subject was initiated by Mr. Owen.

The paper by Professor Penberthy (which will appear next week) then followed.

THE FITZWYGRAM PRIZES.

There were six competitors for these prizes. The written part of the examination was held in London and Edinburgh on the 11th June, and the practical and *viva voce* on the 28th June at the Royal Horse Infirmary, Woolwich.

The following is the result and the number of marks obtained by each competitor, and annexed are the questions.

No.	Written	Practical.		Total Marks.
		Cattle, &c.	Horse.	
3	836	587	750	2173.
39	859	608	1005	2472.
43	865	635	1050	2550.
71	853	589	890	2332.
10	779	Insufficient number of marks.		
55	840	Disqualified for the practical portion of the examination.		

RESULT.

No. 43, Mr. F. W. Carless, 1st prize £50
,, 39, Mr. W. H. Prime, 2nd prize £30
Both from the London School.

No. 71, Mr. G. R. Simpson, 3rd prize £20.
New Veterinary College, Edinburgh.

The examiners appointed were Veterinary-Capt. F. Raymond and Prof. W. A. Edgar. Mr. A. W. Hill was superintendent and hon. secretary.

The following were the questions submitted:—

ANATOMY.

1. (*a*) How many articulatory surfaces are there on the unciform bone of a horse? (*b*) With what other bones does the unciform articulate?

2. Give the origin and insertion of the extensor os suffraginis of the horse.

3. What muscles are attached to the ulna of the horse?

4. Describe the urethra and meatus urinarius of the cow.

5. Compare the plantar nerves (between the knee and fetlock) in the horse and ox.

6. Point out the chief difference in the lungs of the ox and sheep as compared with the horse.

PATHOLOGY.

1. (*a*) What is *your* treatment in the early stages of tetanus? (*b*) Are you aware of any recent experiments in the treatment of tetanus?

2. Divide chloroform narcosis into stages, and give the more important symptoms in each.

3. Does *Puccinia graminis* give rise to any symptoms if eaten in large quantities by horses?

4. What surgical and medicinal treatment would you adopt in a case of complete inversion of the uterus in a cow?

5. Mention the causes operating in the production of uterine inertia in ewes. Suggest remedial and preventive measures.

6. What effect has severe hæmorrhage upon certain constituents of the blood? (*a*) leucocytes; (*b*) hæmocytes.

PHYSIOLOGY.

1. Point out how the parotid differs from other salivary glands in the following:
   (*a*) Composition of saliva.
   (*b*) Reaction to the various stimuli known to influence secretion.

(2) What is the reaction (acid or alkaline) (*a*) of muscle at rest; (*b*) of muscle in activity?

3. (*a*) What is glycogen? (*b*) Where is it chiefly found in horses; (*c*) What is its use?

4. What would be the result of a severe injury to the corpora quadrigemina?

5. Mention the average specific gravity of urine of the following animals: horse, ox, sheep, dog, pig; and state how the presence of albumen can be demonstrated in that fluid.

6. In estimating the value of clean oats what would you expect the following samples to weigh? (*a*) best oats, (*b*) good oats, (*c*) indifferent oats.

EXTRACTS AND NOTES.

THE ALLEGED POISONING OF BRISTOL TRAMWAY HORSES.

At the Bristol Summer Assize, before Mr. Justice Lawrance.

The Bristol Tramways and Carriage Company v. Weston & Company.—The plaintiffs were represented by Mr. Bucknill, Q.C., M.P. For the defence were Sir Walter Phillimore, Q.C., and Mr. Bullen. The case was tried without a jury.

Mr. Bucknill, Q.C., in opening the case, said the plaintiffs were the Bristol Tramways and Carriage Company, Limited, and the defendants were Messrs. John Weston and Company, corn merchants, Queen's Square, Bristol. The statement of claim was that the defendants warranted that certain Indian peas were an excellent and nutritious food for horses, and it was alternatively stated that they were warranted to be reasonably a fit and proper food for horses, and that a quantity was sold to the plaintiffs on these terms. It further alleged that the food so sold was a deadly poison for horses, and that some died, while others fell sick, and damages were claimed accordingly. The defence denied the warranty, and said that the plaintiffs purchased by sample, and that the peas were up to sample, and went on to state that the peas were an excellent and nutritious food, and were reasonably fit and proper for the purpose, and that they consisted of *lathyrus sativus*, which was not a deadly poison for horses. The defence further alleged that if the horses did fall sick, it was in consequence of negligent use of the said food by the plaintiffs. No fewer than 127 horses were seized with illness, which the plaintiffs maintained arose from eating this poisonous stuff. Twelve died, many were sold—some at £4 each—and all those which were seized were not only depreciated and useless at the time for work, but it would be shown that every single horse that was attacked had become permanently injured. Last October Mr. Joseph Wethered, one of the directors of the Tramways company, was riding in a railway carriage between Bristol and Clifton Down Station, when he met a traveller in the employ of the defendant company. This gentleman showed Mr. Wethered what he called Indian peas, which he said could be delivered at 21s. 6d. a quarter at Cardiff. Mr. Wethered suggested that a sample should be sent to the plaintiff company, and a few days after Mr. Wethered and Mr. Gardiner (directors of the plaintiff company), and Mr. Challenger (traffic Manager), who belonged to the Horse Committee which looked after the horses, had a meeting, at which they discussed what had been stated in the train by the traveller. As neither of these three gentlemen had ever heard of this Indian pea before, they determined to go and see Messrs. Weston. They all went to the office of the defendants, in Queen Square, where they saw Mr. Maddox, the manager in the employ of the defendants, who was duly qualified to make statements for purposes of selling. A conversation ensued respecting the food. Mr. Maddox produced a sample, and declared that the stuff was Indian peas, a very good food for horses, and in general use in India for feeding horses, though, he added, it must be given in moderation, as in the case of beans. It was, of course, common knowledge, that beans and peas, if given in moderation, were excellent and nutritious food. Mr. Maddox was told to send a sample, and the Horse Committee met again and agreed to buy a 100 quarters of this stuff. The peas, or the stuff sold as peas, were delivered in due course, and put in an upper loft on the plaintiff's premises. Up to that time all the horses were perfectly well, and each had had 30lbs. of food a day. Each day the food was mixed, the peas or beans being crushed, and 61lbs. was put in each sack as the daily food for two horses, the sacks being sent to the different depots. Up to the time this food was bought the horses received this mixture:—Hay, 9lbs. straw, 4 lbs.; bran, ½lb.; barley, 6lbs.; oats, 5lbs.; maize, 4lbs., and beans, which up to this time had been the smaller Egyptian washed beans—2lbs., making altogether 30½lbs. Up to the month of May the hay and straw were English, but the price went up owing to the scarcity, and all through this illness the hay used was Irish or Canadian, about one-third Irish to two-thirds Canadian. When the so-called Indian peas were purchased, instead of Egyptian beans there were substituted for them an equal amount in weight of the peas. An extraordinary thing then happened. The 100 qrs. of this food lasted from Nov. 2nd to Dec. 2nd. Shortly after the new mixture was given to the horses, the drivers found that the horses stumbled and fell, and not only was this the case when they were in harness, but they absolutely fell when they were in their stalls. First, as the cases commenced to be brought under notice, the drivers were blamed for the falling of the horses, two or three of which cut their knees so badly that they were incurable. Further developments afterwards arose, and the original stumbling became less frequent, and finally passed away. The horses then showed other symptoms, which were very terrible. These symptoms included starting of the eyes and apparent strangulation, while the horses would fall down, and would seem to be gasping for breath. They showed signs of being seized with some fit, and in some cases horses fell and died as if they had been strangled. The particulars in the statement that had been filed showed that the symptoms were a general disturbance of the digestive system, exhaustion, emaciation, difficulty in breathing, roaring of a peculiarly shrill kind, quite different from the usual kind of roaring, paroxysms of various kinds, affections of the larynx, paralysis, and momentary loss of control of the nervous system. The defendants sold, at the same time, through the management of the same Mr. Wethered, a hundred quarters of the very same stuff to the Great Western Colliery Company. In that instance, exactly the same thing happened, only, as the Great Western Colliery gave their horses more than two pounds per diem of these foods, instead of losing 12 horses by death, they lost 20 per cent. of their whole stud, the number of horses which died being 24. For some time the veterinary surgeon of the plaintiffs, Mr. Broad, could not under-

stand what was the matter with the horses which were taken ill, though he treated them as well as he could. At last he went to London to take advice. The expert whom he saw gave it as his opinion that, on the symptoms described, the horses must have been eating some poisoned food, about which there had been some scientific discussion and writing, but with which Mr. Broad was not acquainted, Professor McCall, of Glasgow, was asked to advise on the matter, and a sample was sent to him. The food in question was all exhausted on Dec. 2nd, but when the London expert informed Mr. Broad that from his description of the symptoms it looked like this Indian food which was poisonous, a sample was taken by sweeping the loft where this food had been stored. There was only a peck of it left, and that was carefully collected and sent to Professor McCall. There had been in Glasgow in 1886 an exactly similar outbreak, caused by the same kind of food; while a similar epidemic occurred in Liverpool. Professor McCall, when he got the samples, at once telegraphed "Stop feeding your horses." This, of course, was hardly necessary for at that time the food in question had all been consumed. The worst symptoms in connection with the epidemic among the plaintiff company's horses did not occur for a considerable time after the food had been altogether eaten. The first symptoms in connection with the outbreak occurred whilst they were first eating the food, but these symptoms afterwards appeared to subside. The food was finished on Dec. 2nd, and the worst symptoms began to develop nearly six weeks later. This was precisely what happened in the case of the Great Western Colliery Company, and in the epidemics in Glasgow and Liverpool in 1885 and 1886. There could be no doubt whatever that this food, when given to the horses, had this terrible effect. Of course, it might be the defendants thought they were selling what was described as Indian peas, but the sample found in the loft consisted, not of Indian peas, but of Indian vetch. In fact, the sample in the loft was not a pea at all, but a vetch or vetchling. The vetch was a triangular shaped seed, and was not round like a pea. To make it quite clear, the defendants were asked to provide another sample, which they did, in the perfectly straightforward manner in which they had acted throughout. There were 286 seeds in this sample, out of which 279 were of the poisonous kind. The contention of the plaintiff company was that the defendants had sold them a certain food which they alleged was nutritious, and was good food for horses and that they had sold them a poison.

Mr. Joseph Wethered, director to the Tramways Company and chairman of the Great Western Colliery Company, deposed to meeting a traveller in the employ of the defendants in a local train, and having a conversation. The defendants' traveller made some comment upon the price of corn, and, pointing to a sample of Indian peas, remarked that they could be delivered at 27s. 6d. per quarter. Witness brought the matter under the notice of his colleagues, and with a brother director and their manager they called at the defendants' office to make inquiries. They saw the manager, Mr. Maddox, and of him they inquired the nature of Indian peas as food for horses. His reply was that it was very nutritive, and should not be used more liberally than beans. Several questions were then put by witness's colleague and the manager (Mr. Challenger), and elicited confirmation that the peas were very nutritious and suitable for horse food.

Was the food new to your district?—I had never heard of Indian peas before. If it had been called a vetch instead of a pea we should have never ordered them.

You subsequently ordered some for the Great Western Colliery Company. Do you remember the effect upon the horses there?—I did so order, but from personal inspection cannot tell how the horses were affected.

By Sir Walter Phillimore: Had you ever heard of a muttar pea?—Never.

Had you ever heard of an Indian pea before?—No, and it was on this ground that we went to Mr. Weston's office to make inquiries as to usefulness of the Indian pea as horse food.

Have you heard of the mutter pea since?—Yes.

Was there anything in the appearance of the peas which struck you?—No, they were called peas and we accepted that.

Replying to further questions, witness said Mr. Maddox enforced the point that they were nutritious, but should not be given more liberally than beans. He specifically asked whether the peas were good for horses, and nothing was said that the peas were of a lentil character.

Mr. Henry Gale Gardiner deposed that he was the director who accompanied the last witness to the offices of the defendants in Queen Square. The reason they went down there was that they thought the food would enable them to effect a considerable saving. Mr. Maddox was questioned very closely on what he had said as to the peas being most nutritious. That gentleman said they were used most extensively in India for horse provender. The witness remarked that on one occasion the company had suffered owing to a change of fodder, and that they would not now change to a cheaper food unless they were thoroughly satisfied that it was thoroughly wholesome. Mr. Maddox called the food Indian peas right through the interview.

Cross-examined:—Did not your manager handle the peas?—I cannot say. Do you not remember the word lentil being used?—Most distinctly no. He knew the difference between Canadian and English peas. He had never heard of Indian peas before. He knew that no no more than 2lbs. of these peas were given per day to the horses. He did not know personally the difference between Indian peas and Indian vetchings.

Mr. Charles Challenger, traffic Manager, said he had been connected with the company since 1875, and from 1882 in his present position. He was at the interview in October at the offices of the defendant with the last two witnesses and Mr. Maddox. The latter was asked definitely and pointedly whether the sample which they had seen was fit for horse food. His reply was that the Indian pea was used extensively in India, and was extremely nutritious. There were 576 horses in the tramway department and 198 in the carriage department. Fodder was used the same in each department, and was made up as follows:—9lbs. of cut hay, 4lbs. of oat straw, 6lbs. of crushed barley, 5lbs. of crushed oats, 4 lbs. of crushed maize, 2lbs. of crushed beans, and ½lb. of bran, making 30½lbs. per horse per day. They began to use the Indian peas on the 1st or 2nd of November, and they lasted until December 4th. During that time there were used 2lbs. per horse per head, and were used in the place of beans. Up to November of that year their horses had been in excellent health. In the early days of December he had many complaints from the foremen that the drivers were having their horses down a great deal, and in a most unaccountable manner. Later his own experience corroborated this. The horses would get down, and be quite unable to regain their legs. In the stables they were sometimes attacked. Sometimes the horses fell over gradually, and at other times went down as suddenly as if shot. The horse witness himself drove was attacked. It fell and became so unsteady that it was dangerous to drive. These symptoms continued up to the end of the year, when there was an abatement. Early in 1894 reports reached him of a further strange malady. The horses showed symptoms of heavy breathing, bleeding at the

nostrils, and general appearances of suffocation and strangulation. Late in January at the Horfield depôt he himself witnessed the suffering of a horse. The first complaint he had received was on January 22nd, the next occasion January 27th, and between the 12th and 26th February 13 horses were laid by. The epidemic went on until March 20th, 1894. Eighty horses were taken ill, of which number 10 died.

Cross-examination:—He handled a sample of peas at the office of defendant in the presence of Maddox. He did not submit a sample to any advisers, nor did he consult with the company's veterinary, Mr. Broad. Witness went entirely by the recommendation of Maddox that it was a good food for horses, entirely nutritious. Witness had never heard before of Indian peas. He regarded it as a new importation, and likely to be of great saving in the cost of the provender department. The reason that 100 quarters were purchased at once was that the directors bought monthly, and that quantity would be, roughly speaking, a month's supply. The Irish hay was good and reliable. There were two horses sick before Christmas, but a great number, laid by through broken knees, had not been returned because, at the time, the falling was not attributed to the food. At the Whitsun depôt the horses—or, at least, those used for trace purposes in the hills—received a little more food per day than the pole horses.

William John Young, driver, was called and deposed to a horse that he drove in February being taken suddenly ill. It bled at the nose later on when they were trying it gently; it also began to blow very hard and showed symptoms of suffocation. Cross-examined: The drivers did not feed the horses, but the stablemen.

Edward Dunsford, trace boy, employed at the Whitsun depôt, said he remembered four of the horses being taken ill. The first was taken with bleeding at the nose and blowing, the second horse was similarly taken in the middle of the hill. The other two were similarly taken. All of them were removed to the stable, and were not brought out again for many weeks. He had never seen the horses taken ill like that before.

Abraham Stephens, foreman Victoria Street depôt, said he always saw the horses fed. They were fed in equal quantities five times a day with fodder supplied from the Central depôt. In November and December many complaints of the horses falling about were received. Witness had a horse fall suddenly with him, just as if it had been shot. There were 150 horses at his depôt, and about 20 horses were affected. They began to get better towards February, and the horses were attacked with a malady which affected their breathing. They made an extraordinary noise when suffering. Two other horses died. He was present at the death of the first one, and the cause was suffocation. The other horse died whilst working in the street. In one of the instances the veterinary came and put a tube down the throat, and a quantity of blood and phlegm at once came away. Excitement, he noticed, would bring on relapses with horses which were attacked. Witness had had to do with horses all his life both in England and Australia, but had never before seen horses suffer in this way. Cross-examined: The food came in sacks—one sack for each horse. The whole food was properly and well mixed, so that there was a proper proportion of the ingredients given at each feed.

James Brogan, a cardriver, Victoria depôt, said that in November and December he noticed his horses falling. When they were so taken witness had to walk them, and on one occasion he had his pair down one on top of the other. He remembered on another occasion a mare fall in his car. Later all these horses showed symptoms of suffocation. Cross-examined:—He noticed that saliva flowed freely from the mouth.

Mr. Broad, veterinary surgeon to the company, said he had an extensive practice. Early in November, 1893 his attention was called to something wrong with the horses, that they were attacked with stumbling. He saw several with broken knees, and in turning a horse across the stable the animal would fall as if paralysed. The symptoms beat witness; they abated at the end of the year but were followed by others, intense blowing, bleeding at the nose, and suffocation. In the stables they did not seem much the worse. Witness went to London and saw Mr. W. Hunting, who on learning the symptoms, said, "You must have given the horses Indian peas." He did not think that the horses which had recovered were as good now as formerly. Twenty of them had had the tube put in, and 127 had passed under his hands.

Cross-examined: Witness did not keep any register of his patients or notes of their symptoms. He was paid by salary. He did not notice any "sloughing" of the skin of the legs near the fetlock joint, but he noticed the discharge of saliva from the mouth. He knew of a disease in horses and cattle called "ergotism," which was due to eating ergotised grain. He had not heard of Indian peas before the present case, and if he had been asked by the company to advise them as to the use of Indian peas he would not have known much about the matter. When he was called in during November he did not know that the horses were having Indian peas instead of beans.

Joseph Temple, M.R.C.V.S., practising at Aberavon, South Wales, spoke of the outbreak among the horses of the Great Western Colliery Company, and spoke of the feed of these horses, which amounted to 30lbs. per day, including 3lbs. of beans. Towards the end of last year some Indian peas were sold to the company, which were crushed and substituted for the daily three pounds of beans per horse. At the latter part of November, as complaints were made that the horses would not eat the peas, their allowance was reduced to 1½ pounds of peas, and 1½ pounds of beans was given. Then the horses were seized with swellings of the legs, and the peas were discontinued at the end of December. In February, however, as a large quantity of Indian peas was in stock, the horses were again given 1½ pounds of peas daily, and they were soon seized with illness. They fell about, and 30 of them died. They were taken with roaring, and some of them fell dead five minutes after they were taken. They died from asphyxia. Examined by Sir Walter Phillimore, said he had never seen a case of ergotism.

Sir Walter Phillimore said that he was instructed that the Great Western Colliery Company had refused to pay for some hay on the ground that it had caused this illness among the horses, and that the purveyor had issued a writ against them.

Mr. Bucknill said that Mr. Wethered, the chairman of the Great Western Colliery Company, would be recalled later on, and Sir Walter could cross-examine him on the point in question.

Thomas Leather, M.R.C.V.S., Liverpool, said that in 1884 his attention was called to an outbreak of a similar kind at Liverpool, caused by eating the Indian peas known as *lathyrus sativus*. The peas which caused this outbreak were similar to those which had been eaten by the Bristol horses. He detailed scientific experiments which he had made into the diseases caused by eating these peas, and said that from his examination of the horses in Bristol on June 12th he could state that their illness was caused by eating *lathyrus sativus*. The last horse seized at Liverpool was taken eight weeks after the food was knocked off.

By Sir Walter Phillimore:—He did not know that these peas were called Indian peas. They were commonly known as "muttar." He did not know that these peas were largely imported into England every year. He would not use the peas for horses even in

small quantities. They would not use them at Liverpool at any price. He did not think that the peas could be safely used even if they were boiled. There had been much scientific discussion about these peas. He knew that Professor Williams formerly held the opinion that the disease was caused by a bacillus in the dirt occasionally found with the pea, and that by washing the pea it was made wholesome.

Re-examined by Mr. Buckuill:—Professor Williams did not now hold the opinion that the disease was caused by the bacillus in the dirt, and he had left this theory out of his last book on the subject.

Veterinary-Captain Fred Smith, stationed at Aldershot, who is a Fellow of various scientific societies, was next called. He had served in India. He was acquainted with *lathyrus sativus*, which was not used in India, because it was recognised as a poisonous vetch. The peas sent him as a sample were undoubtedly *lathyrus sativus*. On March 11th he came to Bristol and saw some horses, particularly one which had been seized with suffocation, and others which had been tracheotomised. One horse was taken out by Mr. Challenger and placed in a tramcar, and before it had gone many steps it was seized with suffocation. He had no doubt that the horses were suffering from *lathyrus* poisoning.

By Sir Walter Phillimore: So far as he knew, *lathyrus* had never been used for horses in India. Neither in its green form nor as grain was it used for feeding army horses. He believed it had been used by natives. He was aware that there were 357,000 acres of it in crop in the Central provinces of India. He had heard that the pea was used by poor people of India for food in times of famine. It was an historical fact that human beings in India had been poisoned by living exclusively for months on meal made from this pea. He had never heard of *lathyrus* coming to England before the case quoted by Professor Leather, and he did not know that it was largely sold in England. He thought that a small proportion of *lathyrus* given to a horse would be a poison. He did not know that it was most uncertain when *lathyrus* was injurious and when it was not. He did not know that in Church's book on "The Food Grains of India," *lathyrus* was included as a food grain, nor did he know that it was exhibited as a food grain at the Imperial Institute. He never saw a case in which mischief had been done by eating *lathyrus*, except in this instance.

Professor Green deposed that he had examined the sample of the feed supplied him by the previous witness, and found it practically all *lathyrus sativus*, which, was a vetchling and not a pea. He agreed with Church's analysis of the growth. Since then the nitrogen was found to contain deleterious matter. It was said that boiling destroyed the poison. If the seed was used for human food it was poisonous, but if boiled it was not so. He had heard of the horses suffering and dying, as deposed by the witnesses, and the symptoms described tallied exactly with the opinions of the authorities he had dealt with.

Cross-examined: In Church's analysis there was nothing to indicate anything deleterious. He knew of several works containing allusion to the *lathyrus sativus*, including the "Treasury of Botany" and "Chambers's Eucyclopædia."

Mr. Wethered was re-called as to the alleged inferior hay received at the Great Western Colliery. The contractor suggests arbitration. Cross-examined: Witness had induced a farmer he knew to purchase 20 quarters of *lathyrus sativus*. This farmer had horses, pigs, and chickens.

Prof. McCall stated that he was president of the Glasgow Veterinary College. Directly the samples were sent him by the Bristol tramways Company he saw that *lathyrus sativus* was present in large quantities. He described the effects of his vetching upon horses when used as food. He related his own experiences in testing horses with the food, and read the record which he had published. There had been an outbreak at Glasgow, in which he had been called in. The symptoms shown by the horses at Bristol were identical with poisoning from the vetchings in question. Cross examined:—He reckoned that it would take about 2lbs. a day for about six weeks to affect a horse seriously, and possibly fatally. In his experiments he had brought on the symptoms by giving a worn out horse, but otherwise healthy, 10lbs. of Indian pea meal. When he talked of Indian pea meal in his writing he meant *lathyrus sativus*. This closed the case for the plaintiffs.

Sir Walter Phillimore, in opening the case for the defence, commented upon the extreme distances of time at which the illness of the horses occurred. It was notorious last year that everybody who had animals to keep was glad of any cheap substitute for the ordinary food, and they knew that between Dec. 22nd and Jan. 5th the horses in question had Canadian peas to eat. These Canadian peas were eaten very much nearer the time of the illness than were the Indian peas. Of course, it might be that all pea food was at that time of the year, or when horses were in certain conditions, unsuitable for horses, but why *lathyrus* should be more unsuitable than Canadian or any other pea he did not know. The responsibility of purchasing these peas was upon the Tramways Company and its advisers. Of course, fraud was in that case entirely out of the question, and it should be borne in mind that plaintiffs were warned that the peas were a strong food, of the character of lentils, to be used with caution, as was necessary with all Eastern foods of that character. The contract in the case was expressed in the writing, which set out that it was a contract to sell Indian peas. The defendants sold *lathyrus sativus*, which were Indian peas. Botanically, *lathyrus* was not a strict pea, but the question was whether it was commercially known as a pea. He should be able to satisfy his lordship that *lathyrus* was one of the three species which were all indiscriminately known as Indian peas by commercial men. These three kinds were the white pea, the green pea, and the muttar pea. All these three were distinct from one another, but all were known as Indian peas. The contention of the defence was that the plaintiff contracted to buy Indian peas, and that they had got them. The fact that the peas had not suited their purposes was not a cause of action against the defendants. When the plaintiffs went to Mr. Hunting, he did not say "Your horses have been eating *lathyrus*," but he said "They have been eating Indian peas." It was a fact that astonishing quantities of these Indian peas were sold in this country. They did harm sometimes, but so did alcohol, while even honey harmed some people and animals. No doubt it was a food to be used with caution. Perhaps it might be said that the defendants should have told the plaintiffs that the peas were considered dangerous, but the truth was that they were themselves ignorant of the properties of the peas. He admitted that the peas occasionally did harm, but what the occasions were no one had yet been able to find out. No doubt if they were excessively and continuously used they did harm, but so did arsenic if used in excess, though in small quantities it was valuable. The plain fact was that the plaintiffs were in such a hurry to get cheap food that they did not make any inquiries about this new food.

William King Clements, manager for defendants, said he had been a grain purchaser for ten years. He had known the article known as muttar peas for four years. Witness said he spoke to Mr. Wethered, and said that the Indian peas were strong like lentils. His firm had dealt in them for three years. At Cardiff his firm made a horse food for two years which contained about 3 per cent. of *lathyrus sativus*. They were selling about 1600

sacks, and were increasing it, without complaints. Witness purchased 260 quarters at Liverpool, and it was from this he showed Mr. Wethered a sample. Cross-examined: Witness gave the names of several Liverpool firms from whom he purchased these Indian peas. These were all known as muttar peas. He told Mr. Wethered they were strong peas, more like lentils, and he made this comparison as it was known that lentils must be used with great caution. He had never heard of lentils being given to horses.

Re-examined: He knew nothing stronger than lentils in nutritive power, and that was the reason he mentioned them by way of comparison.

Mr. William Henry Maddox, manager to defendants, said he had known the muttar pea for three years, and had sold it during that period. Coming to the interview between the tramway directors and himself, they all examined the sample, and Mr. Wethered asked witness what he could say about them, and whether they were likely to be good food for horses. Witness replied that they were largely used in Liverpool, and were considered a good but strong feed of a lentil character. Witness thought they seemed a little dubious, and suggested that they should take 10 quarters to try, to which Mr. Wethered said that if they made up their minds they should require 100 quarters. Mr. Challenger examined the sample and bit some of the seeds, remarking that they had a pea-like flavour, and told Mr. Wethered that he thought they would do. In respect to the 510 quarters bought by the last witness he gave the names and addresses of other purchasers of the Indian peas. Received complaints from no one except the Tramways Company and the Colliery company. The firm had sold before this about 100 quarters on the Bristol market. Cross-examined: Could not say that the other purchasers had used the peas for horse food. He understood that the directors came for information respecting the peas. When he said that they were largely used he meant to convey that they were largely dealt in on the Liverpool market. He could not say that they were much used for horses.

Mr. John Weston, the defendant, said his firm had sold 1700 quarters of muttar peas since 1891. He had never received complaints, except from the Tramways Company, and the Great Western Colliery Company.

James Phillips, manager of the Glynn Mills, spoke of the amount of muttar peas which had sometimes been used in making patent food at those mills.

Dr. Bernard Dyer, D.Sc., London, F.C.I., Official Analyst to the London Corn Trade Association, who holds numerous other public appointments, said he frequently analysed the grains and pulse which came from the East. The sample which was sent him from Bristol he recognised as almost entirely *lathgrus sativus*, which he knew as the ordinary muttar of commerce. The substance was known as muttar or muttar peas, or Indian muttar, or sometimes simply peas. He had many samples of muttar sent to him for analysis, but only for mechanical analysis, in order to ascertain the quantity of foreign matter or dirt in it, as the goods were sold under a dirt clause. Muttar was a common article of commerce. It was only lately that he was aware that *lathyrus sativus* might be considered, under some circumstances, as a risky food. He had no personal knowledge of its effect on horses, but he should think that under certain circumstances its effect would have in it the elements of variability.

Professor Smetham, analyst to the Liverpool Corn Trade Association, said he had a knowledge of the muttar peas since 1887. He had analysed them now for years, and on his recommendation thousands of tons had been purchased by corn merchants.

Professor Wortley Axe, late of the Royal College, admitted that he had no practical experience in the use of *lathyrus sativus*, but should give in to the authorities on the subject. There had been only two cases of horses suffering prior to this, namely, at Liverpool and Glasgow, and he noticed that these attacks were all at hilly places, and during a period of cold weather.

Mr. McDougal, miller, of Liverpool and Manchester, said he sold the 200 quarters to defendants from a consignment of 1000 quarters. He had been dealing in muttar peas for years, and had used them in the feed for his own horses, without disastrous results. The muttar peas were turned into Indian pea meal, and sold to farmers for stock food.

Mr. Hopkin, F.R.C.V.S., said he attended regularly the horses of the last witness, and during the time spoken of by Mr. McDougal none of them showed symptoms of muttar poisoning.

Mr. Alex Mee, representing the firm of importers who had sold the second parcel to Messrs. Weston, said he had never heard of any complaints. Cross-examined: He could not say that it was a good or bad feed for horses; he had no personal experience.

Mr. Wm. Townsend, hay and straw dealer, of Stroud, said he had known muttar peas for six years. He had purchased in Oct. last 100 qrs. from defendants, and of that quantity 55 qrs. had been used for horse food without complaint. Witness was using it now in his own stable of thirteen horses, at the rate of 2lb. per horse per day.

Mr. J. N. Woodhams, Worcester, had sold for the firm he represented muttar peas for seven years. He used them in his horse's keep—about 1lb. a day. He sold Indian pea meal and peas to livery stable keepers of the city.

A number of hay and corn dealers all spoke to an extensive use of muttar peas, and without complaint.

This was the case for the defendants.

His lordship said if he took the arguments of counsel that night he could not deliver judgment.

It was therefore agreed that the final arguments of learned counsel should be made before his lordship on Saturday week in London, when his lordship will deliver judgment.

Personal.

Accidents.

Mr. G. Craik, M.R.C.V.S., of Alnwick has been rather seriously injured. He had occasion to perform an operation on a horse, when, by some means, the animal was partly loosened, and kicked out. Mr. Craik, intent on his work, was severely kicked in the chest and his collar bone was broken. He pluckily finished his operation, and on arriving at Alnwick, was attended by Doctors Robson and Scott-Purves. He is, we are glad to say, progressing favourably. During Mr. Craik's illness Mr. Scotson is acting for him.

Mr. W. R. Cummings, also of Alnwick, was crushed badly while following his profession, and has not yet recovered.

Appointments.

Mr. Clement Stephenson, F.R.C.V.S., of Newcastle-on-Tyne, has been appointed one of the veterinary inspectors at the forthcoming Yorkshire Show at Beverley.

Mr. Alered Cawdle, of Bath Road, Bedford Park, is the honorary V.S. to the West London Canine Society which recently held its show of dogs at Ealing, also to the West Middlesex Fox Terrier Coursing Club.

THE ROYAL VETERINARY COLLEGE.

The Duke of Cambridge presided yesterday afternoon over the annual meeting of the Governors and subscribers to the Royal Veterinary College, which was held in the Board Room of the Institution in Great College Street, Camden Town. Among those present were Colonel Sir Nigel Kingscote (Chairman of the Board of Governors), Lieutenant-General Sir Frederick FitzWygram, M.P., Sir

Walter Gilbey, Professor Brown, C.B., Professor Crookshank, Mr. H. Sutton, and Mr. Richard A Powys (secretary).—The report stated that since the last meeting two vacancies had occurred in the list of the Governors owing to the retirement of Lord Ilchester and the death of Lord Tweedmouth. The considerable decrease in the number of entries was, no doubt, attributable to a large extent to the increased severity of the matriculation examination. The Governors regretted that after nearly 25 years' service Professor Axe had retired from the College. Of the 63 students who had entered the College, 39 did so by matriculation and 24 by educational certificate. Of the 111 who entered last year, 67 did so by matriculation and 44 by certificate. The number of names on the books at the beginning of the winter session was 327. During the year 52 students had obtained the diploma of the Royal College of Veterinary Surgeons, 60 students had succeeded in passing the first professional examination, and 51 the second. The number of diplomas granted to students of the College last year was 50, as compared with 50 in the previous year. The average number of dogs under treatment had been 15, against 14 last year. The number of animals brought to the College for advice and treatment during the past year had been 1292, of which 893 had been retained for treatment in the infirmary. The number of horses examined for soundness was 1012. New subscribers to the number of 170 had been enrolled during the year. There were at present 123 life and 894 annual subscribers. The governors regretted that the expenditure for the year had exceeded the income by £512.

Sir Nigel Kingscote, in moving the adoption of the report, expressed great regret that the accounts showed a balance of £512 on the wrong side. Nearly the whole of that sum, however, was accounted for by the high price of forage during the past year, there was no reason to expect that this year they would not be able to keep their horses cheaper. There was no idea of increasing the charge for keeping horses, and he hoped the members of the Society would continue to send their horses to the institution. He made an appeal to the owners of horses to support the Society. Considering that the College was the only one in England which taught veterinary science, and that very high prices were now given for horses and stock, he thought the institution ought to be more supported than it was by owners.

The Duke of Cambridge, who was cordially received, said he regretted that the balance was on the wrong side of the account, and considered that this was in some measure due to the situation of the College, which was a long distance from those in the West End of London who were most likely to avail themselves of the excellent advantages which it afforded. He considered that something ought to be done in order to let the public know the excellent work the institution was doing. (Hear, hear). There was no disguising the fact that the institution was doing a national work, and as such richly merited the support of the public. (Cheers). He pointed out that a subscription to the College carried with it the privilege of having five horses examined for soundness annually free of charge, the opinion of one of the professors gratuitously in respect to any animal it might not be wished to send to the College for treatment, and finally, the privilege of sending into the College for treatment any number of horses or other animals for which there might be room at a charge for their keep. He hoped that when the public were made acquainted with the benefits offered by the institution they would more readily support it. (Cheers). Nothing should be wanting on his part to promote its success in every way in his power. (Applause).

Sir Walter Gilbey was of opinion that a great many owners of valuable horses did not know the advantages the College offered. If country owners were aware of them he was sure they would receive a great many more subscribers.

Col. Howard Vincent, M.P., also questioned whether people realised the fact that horses were examined at the College for nothing, and that is cost less to keep a sick horse there than in a private stable. If his Royal Highness would next spring sign a short appeal setting out the advantages the Society offered he believed it would do much good.

The Duke of Cambridge expressed a willingness to fall in with any such suggestion which would tend to benefit the College.

The report was adopted, and it was announced that the scholarship had been awarded to R. W. Hall; the Colman Silver Medal to R. Voisin, St. Lawrence, Jersey; bronze medals to W. J. Forman and H. Carlton Reeks; and the certificate of merit to W. L. Harrison.

Lord Tweedmouth was elected a Vice-President, and Lord Houghton and Sir Blundell Maple, M.P., Governors of the Society.

A vote of thanks to the Chairman, moved by Sir F. FitzWygram, and seconded by Sir W. Gilbey, terminated the proceedinge.

THANKS TO ELECTORS.

Sir,

I should like to have the privilege of communicating through the pages of your widely read journal, my most sincere and respectful thanks to those members of the veterinary profession who supported me in my late successful candidature for the Council of the R.C.V.S.

Having issued no address, and made no appeal to my brother practitioners enhances the great honour that has been done me, and it will be my constant and earnest endeavour to show myself worthy of their confidence. I trust that those gentlemen who without solicitation favoured me with their votes at the recent election will never at any time have to regret their choice of me as one of their representatives.

I remain sir, your obedient servant,

W. Owen Williams.

CORRESPONDENCE.

CASTRATION STANDING.

Dear Sir,

I should like very much to read an account of the new method of "Castration Standing." I have watched your journal for some months and I have not been able to find out an account of the operation. I write this in the interest of a Vet. in Canada, and not for my own use or profit.

Yours faithfully,

"Not a Vet."

"TECHNICAL EDUCATION."

Sir,

Mr. Robinson and I do not differ very widely in our opinions, judging from his letter in your issue of the 14th inst. Now as to the principle of the thing, I have no objection to the enlightenment of the public as to the treatment of animals in health, where required, though the farmers in my district know how to select, breed, rear, and feed all animals as well as Mr. Robinson or I do. What they want are prescriptions to use in disease so as to save sending for the V.S. I object to these lecturers giving prescriptions, or visiting cases that are being treated by private practitioners. It is not always agreeable to be told, as I have been, that the C.C. lecturer has visited and given his opinion and advice about your case—my client did not tell me that he had consulted the C.C. lecturer, or would like to consult him. Had there been room for a difference of opinion who would have been the sufferer? I guess the poor

Country Practitioner.

Several communications are unavoidably held over.

Communications, Books, and Papers received:—Messrs. C. Sheather, C. Pack, A. W. Hill, H. D. Chorlton, T. M. Coates, E. W. Hoare, W. O. Williams, F. C. Mahon, A. Peele, Dr. Miers, J. A. W. Dollar, R. W. Dawtrey, "Country Practitioner." *Medical Review* (St. Louis, Mo.) *Journal of Comp. Pathology, American Vety. Review, Derbyshire Advertiser, Western Morning News.*